MEDIATING ROLE OF CORE TOTAL QUALITY MANAGEMENT IN THE RELATIONSHIP BETWEEN INFRASTRUCTURE TOTAL QUALITY MANAGEMENT AND ORGANIZATIONAL PERFORMANCE OF PUBLIC HOSPITAL IN PAKISTAN

MUHAMMAD QASIM MAQBOOL

900676

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Tarikh : **26 Jun 2019**
Date

Nama Pelajar *(Name of Student)*	:	**MUHAMMAD QASIM MAQBOOL (900676)**
Tajuk Tesis *(Title of the Thesis)*	:	**MEDIATING ROLE OF CORE TOTAL QUALITY MANAGEMENT IN THE RELATIONSHIP BETWEEN INFRASTRUCTURE TOTAL QUALITY MANAGEMENT AND ORGANIZATIONAL PERFORMANCE OF PUBLIC HOSPITAL IN PAKISTAN**
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ABSTRACT

Health care organizations in developing countries face great challenges from both inside and outside the organization. In light of this, the contribution of total quality management (TQM) is extremely valuable for health care organizations to overcome these challenges. Drawing upon resource based view (RBV) of the firm; this study examines the mediating role of core TQM on the relationship between infrastructure TQM and performance of public hospitals in Pakistan, and moderating role of national culture on the link between core TQM and performance of public hospitals in Pakistan. This study applied a hypo deductive research approach. Using cross sectional data, a total 378 valid questionnaires were collected to confirm the proposed hypothesis by using partial least square (PLS) path modeling approach a variance based structural equation modeling technique (SEM). Statistical results show that infrastructure TQM is positively related to core TQM. Core TQM is also found to be positively related to organizational performance. Moreover, results reveal that core TQM mediates the relationship between infrastructure TQM and organizational performance. However, no significant result is found for the moderating effect of national culture on the relationship between core TQM and organizational performance. For theoretical and practical contribution this study contributes to the RBV by providing empirical evidence to support the assertion of the theory. Therefore, this study can also help the physicians, surgeons, pharmacist and health professionals to contribute their services to gain organizational performance. Finally, the limitations and suggestions for future research this study restraints the sample that was taken from the public hospitals of Pakistan and cannot be generalized to the other service organizations.

Key Words: Pakistan, Public hospitals, Infrastructure TQM, Core TQM, National culture

ABSTRAK

Organisasi kesihatan di negara-negara membangun menghadapi cabaran besar dari dalam dan luar organisasi. Sehubungan dengan itu, sumbangan pengurusan kualiti (TQM) sangat berharga bagi organisasi kesihatan untuk mengatasi cabaran-cabaran ini. Berdasarkan kepada pandangan berasaskan (RBV) sumber firma, kajian ini mengkaji peranan teras perantara pengurusan kualiti terhadap hubungan antara infrastruktur pengurusan kualiti dan prestasi hospital awam di Pakistan, dan peranan budaya kebangsaan dalam hubungan antara teras pengurusan kualiti dan prestasi hospital awam di Pakistan. Kajian ini menggunakan pendekatan penyelidikan hypo deduktif. Dengan menggunakan data keratan rentas, sejumlah 378 borang kaji selidik yang sah telah dikumpulkan untuk menguji hipotesis yang dicadangkan dengan menggunakan pendekatan *Partial Least Square* (PLS), teknik variasi berasaskan SEM. Dapatan statistik menunjukkan bahawa infrastruktur pengurusan kualiti secara positif berkaitan dengan teras pengurusan kualiti. Teras pengurusan kualiti juga didapati mempunyai hubungan positif dengan prestasi organisasi. Selain itu, dapatan kajian juga mendedahkan bahawa teras pengurusan kualiti menjadi pengantara hubungan antara infrastruktur pengurusan kualiti dan prestasi organisasi. Walau bagaimanapun, tiada sokongan empirikal yang didapati dalam menyederhanakan kesan budaya sesebuah negara di dalam hubungan antara teras pengurusan kualiti dan prestasi organisasi. Bagi sumbangan terhadap aspek teori dan paraktikal, kajian ini menyumbang kepada teori RBV dengan memaparkan bukti empirikal untuk mendukung penggunaan teori. Oleh yang demikian, kajian ini membantu ahli perubatan, pakat bedah, juru farmasi, dan kakitangan kesihatan profesional untuk meningkatkan prestasi dan kualiti perkhidmatan organisasi. Akhir sekali, kekangan dan cadangan untuk kajian masa hadapan adalah berkaitan sampel kajian yang diambil daripada hospital awam di Pakistan tidak dapat digenaralisasi untuk sektor perkhidmatan yang lain.

Kata Kunci: Pakistan, Hospital Awam, Infrastruktur Pengurusan Kualiti, Teras Pengurusan Kualiti, Budaya Kebangsaan.

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Muhammad Qasim Maqbool

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LIST OF ABBREVIATIONS

TQM	Total Quality Management
CTQM	Core Total Quality Management
ITQM	Infrastructure Total Quality Management
EFQM	European Foundation for Quality Management
BOD	Burden of Diseases
JIT	Just In Time
LTO	Long term orientation
STO	Short term orientation
HCMs	Establishing hierarchical component models
HRM	Human Resource Management
QMS	Quality Management System
ITI	Information Technology Infrastructure
CSFs	Critical Success Factors
NHS	National Health Services
GDP	Gross Domestic Product
HIS	Health Information System
NCDs	Non-Communicable Diseases
WHO	World Health Organization
CVD	Cardiovascular
TB	Tuberculosis (TB)
HTN	Hypertension
ICT	Information Communication and Technology
NQA	National Quality Awards

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DA	Deming Award
EQA	European Quality Award
OP	Organization Performance
SPSS	Statistical Package for Social Sciences
PLS	Partial Least Squares
CFA	Confirmatory Factor Analysis
HTMT	Heterotrait-Monotrait

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Organizations globally have been determining ways to improve business practices to gain competitive advantage. In today's global competition quality has been pondered as an important factor for attaining competitive advantage (Wheaton & Schrott, 2018). The habit of quality management has become widespread between organizations during the last decades (Irvine & Irvine, 2018). In today business market customer focus is an important element for business success. Land, labor, capital is important but these elements insignificant if the customers are not satisfied. Customer has more options than before so firms are more worried about customer satisfaction that's way they give more importance to customer requirements today (Ross, 2017).

In today business market existence is only possible through customer satisfaction which comes through quality goods and services with the lowest possible price (Dale & Plunkett, 2017). Total Quality Management (TQM) is a tactic for constantly refining the quality of goods and services provided through the contribution of individuals at all levels of an organization. It is a universal corporate philosophy comprising three vital principles of 'Total' as participation of all people and all departments; 'Quality' as fulfill customer needs and expectations; and 'Management' as facilitating conditions for total quality (Dale & Plunkett, 2017; Irvine & Irvine, 2018; Ross, 2017).

These decades, quality management practices play important roles in advancing firms in the competitive market. Thus, it is believed that quality management is basic practices for organization survival, and nowadays, many organizations have embedded quality management practices into their operations (Wheaton & Schrott, 2018). Previous studies Anil and Satish (2019); Singh, Kumar, and Singh (2018); Xiong, He, Deng, Zhang, and Zhang (2017); Ju and Park (2016); Parvadavardini, Vivek, and Devadasan (2016); H. S. H. Al-Dhaafri (2014); Karim and Arif-Uz-Zaman (2013) agreed that total quality management leads organization towards better performance. Organization implement TQM because it delivered tangible and intangible benefits such as increased productivity, reduced cost of operation, improved quality and less rework, enhanced customer satisfaction, enrich employee commitment, improved communication, enhanced sustainable competitive advantage, improved customer service and loyalty, enrich employee relations and satisfaction, improved organization management, enhanced ethics and social responsibility, reduced errors and improved employee morale, endorse continuous improvement and innovation, enhance process and improved financial performance of the organization (Talib, Rahman, & Qureshi, 2012).

Total quality management becomes utmost important for manufacturing and service organizations due to globalization, advancement in technology, deregulation of markets and intense competition. Total quality management tries to integrate all organizational functions to concentrate on meeting customer requirements and organizational goals and objectives (Talib, Rahman, & Qureshi, 2013). In the past decades, a lot of work has been done by previous researchers about (TQM) in the manufacturing sector as compared to

service sector (Khalaf & Salem, 2018; Psomas, Vouzas, Bouranta, & Tasiou, 2017). Moreover, researchers predominantly ignore to pay attention to (TQM) towards service sector like health, education etc. (Mehta, Verma, & Seth, 2014). Furthermore, it has been indicated by Talib (2013) that the extensive application of (TQM) to enhance organizational performance began in the manufacturing sector and letter spread towards service sector. Recent studies on TQM demonstrate that there is a sudden shift in the using of TQM from manufacturing to the service sector.

The economy of the developing and the developed country is based on three sectors. First a primary sector which is comprised of mining industries, forestry, agriculture or agribusiness and fisheries. In short, predominantly base on natural resources. Second, the secondary sector comprises manufacturers and industries. This sector mainly depends on the products of the primary sector. Third, a tertiary sector where the output in the form of services that makes life enjoyable and comfortable. Researchers indicate that the third sector of the economy (service sector) is vital for both developing and developed economy (Bon & Mustafa, 2013; Kashif, Altaf, Ayub, Asif, & Walsh, 2014).

In local and international economics services industry play a vital role. The contribution of service industry i.e. healthcare, education, hotels and restaurants, financial services, government services, transportation, personal and social services etc., in the Gross Domestic Product (GDP), has been dramatically increasing over the last two decades (Bon & Mustafa, 2013). In a developing economy hospitality industry, recreational industry, transportation services, financial services, communication services, information

technology industry, education, and health services composed the services sector of a developing country (Talib et al., 2012). From all sub-sectors of services industry health services sector become the most important or major sector of service based economies (Ghosh & Sobek 2015; Kashif et al., 2014).

The performance of healthcare sector gets huge attention due to its importance as a vital sector of the economy (Ghosh & Sobek 2015). With its association of human life, healthcare sector plays one of the most important role in the society and requires constant development and investment (Cheng, Bamford, Papalexi, & Dehe, 2015). According to the latest Web World Hospitals Ranking (2016), out of 20 top hospitals in South Asia, 19 hospitals are based in India, one hospital is based in Bangladesh and none has been based in Pakistan. Furthermore, according to this ranking the best public sector hospital in Pakistan rank 5,911 in the world.

Pakistan healthcare sector performance is lagged far behind regional countries that have similar level of socio-economic condition as that of Pakistan (State of Health Sector in Pakistan, 2018). United Nations placed Pakistan at 150 among 189 countries in Human Development Index 2018 (The News, 2018). Therefore, diseases burden and health related challenges in Pakistan is enormously high (Qidwai, 2016). World Health Statistics (2017) depicts that Pakistani government spends 4.7 Percent of GDP for healthcare, which is less than regional peers (e.g. Iran 17.5 Percent, Afghanistan 12.8 Percent, China 10.4 Percent, and India 5.0 Percent). As depicted in Table 1.1, that Pakistani government gives no relief for the healthcare sector in the budget.

Table 1.1

Pakistan healthcare sector budget

Health and Nutrition Expenditures					
Public Sector Expenditure (Federal and Provincial)					
Fiscal years	Total health expenditures	Development Expenditures	Current Expenditures	% change	% of GDP
2012-13	125.96	33.47	92.49	128.51	**0.56**
2013-14	173.42	58.74	114.68	37.68	**0.69**
2014-15	199.32	69.13	130.19	14.94	**0.73**
2015-16	133.93	39.94	94	17.26	**0.45**

Source: Pakistan Economic Survey 2015-2016

Pakistan is fronting a double burden of diseases (BoD) due to communicable and non-communicable diseases. A communicable disease is one that is spread from one person to another through a variety of ways that include: contact with blood and bodily fluids; breathing in an airborne virus; or by being bitten by an insect. A disease that cannot be transferred from one person to other person is known as non-communicable diseases such as unhealthy diet, tobacco use, cardiovascular (i.e. blood pressure/ cholesterol level), diabetes, cancers, chronic respiratory diseases. Vaccines and medicines coverage for the communicable and non-communicable diseases in Pakistan is 72 Percent, which ranked Pakistan lowest in the SAARC region as shown in Table 1.2.

Table 1.2

Vaccines and medicines coverage in SAARC region

No	Country	Vaccines/Medicines Coverage Percentage
1	Bhutan	99%
2	Srilanka	99%
3	Maldives	99%
4	Bangladesh	94%
5	Nepal	91%
6	India	87%
7	Afghanistan	78%
8	**Pakistan**	**72%**

Moreover, mortality due to non-communicable diseases (e.g. cardiovascular disease, cancer, diabetes or chronic respiratory disease) in Pakistan is 24.7 Percent, which is far behind the other developing countries that are Maldives 12.4 Percent, Malaysia 17.1 Percent and Srilanka 17.7 Percent. In addition, tuberculosis frequency in Pakistan is 270 per 100,000 persons, comparing this with Pakistan neighbors gives a very gloomy picture as tuberculosis frequency in Iran, China, Afghanistan and India was 16, 67, 189, 217, respectively.

Women play a vital role in shaping a society but they remain at alarmingly high risk of maternal infection and mortality. Maternal mortality ratio in Pakistan is alarmingly high. Pakistan is the 2nd largest contributor to the maternal mortality in the SAARC region. Every year 178/100,000 women died during live birth. In Pakistan only 52 percent births are attended by skilled and qualified persons. Antenatal care and postnatal care services in Pakistan as compare to other countries is very poor. According to the latest United Nations report, Pakistan ranked as a riskiest country to be born in the world (State of Health Sector in Pakistan, 2018). In Pakistan child mortality rate has fallen 27 percent in the last two decades, which is far behind the global child mortality rate, that is dropped 43 percent (Gallup Pakistan, 2018). Child malnutrition prevalence ratio in Pakistan is alarmingly high as compared to other developing countries (Asim & Nawaz, 2018). Due to child malnutrition globally 155 million children are stunted and Pakistan accounts for one out of every 15 such children (Express Tribune, 2018). Marvelous attainments have been made in the worldwide fight against polio eradication but Pakistan is one of the

three remaining countries alongside with Afghanistan and Nigeria (State of Health Sector in Pakistan, 2018).

The service sector of Pakistan generates 34 percent of employment, contribute more than 50 percent of the Gross Domestic Product (GDP), as well as brings US$ 4 billion in term of remittances from abroad (A. Ahmed & Ahsan, 2011). Pakistan is the 2nd largest Muslim populous country and the 6th largest world populous country where 70 percent peoples reside in rural areas (Kashif et al., 2014). Public health sector which includes child healthcare centers, maternity centers, dispensaries and public hospitals is the major source of providing healthcare services that lead citizens towards a healthy lifestyle, so they can contribute to the national development of the economy (Irfan, Ijaz, Kee, & Awan, 2012). According to the World Bank's South Asian Economic Report (2015), Pakistan has placed at the bottom of the eight economies in South Asia, projecting a moderate growth rate of 4.4 percent the second-lowest after Afghanistan. Healthcare sector becomes an utmost important sector in a service based economy that served as a catalyst in a weaken economy like Pakistan.

Table 1.3

GDP growth rate of south Asian countries 2015/2016

GDP growth rate	**2013**	**2014**	**2015**	**2016**
Afghanistan	3.7	2.0	**2.5**	**5**
Bangladesh	6.0	6.1	5.6	6.3
Bhutan	2.0	5.2	6.7	5.9
India	6.9	7.2	7.5	7.9
Maldives	4.7	5.0	5.0	-
Nepal	3.9	5.5	5.0	5.0
Pakistan	3.7	4.1	**4.4**	**4.6**
Sri Lanka	7.3	7.4	6.9	6.6

Source: World Bank's South Asian Economic Report (2015)

From the research background, following research motivations can be derived. First TQM in the service sector as compared to manufacturing sector are not yet considering worthy for research and have not been researched adequately. Second importance of health care sector in a service based economy is not ignorable from both academically and practically. Lastly, the aforesaid statistics showed that the performance of Pakistan healthcare sector in South Asian region, Asian region as well as in the world in not satisfactory.

1.2 Problem Statement

Pakistan is the 1st Muslim nuclear power country in the world as well the 2nd largest Muslim populous country in the world that provide home to 11 percent of the world Muslims. World Population Review (2019) reveals that Pakistan is 6th most populous country in the world. World's population is projected to grow at a rate of 1.12 percent in coming decades, but Pakistan population will be going to grow with the fastest growth rate 1.88 percent with respect to the world most populous countries (World Population Review 2019). In spite of highest population growth rate, according to the latest report by Reuters (2013), titled "World Health Statistics" showed that the health care sector of Pakistan is far behind as compared to world most populous countries such as China, India, United states, Indonesia and Brazil as depicted in Table 1.4. In Pakistan just 27 percent of the population facilitated from full healthcare coverage which includes mostly government representatives and individuals from military, and remaining 73 percent relies upon out of pocket payments (Ahmad Hassan, Khalid Mahmood, & Hudebia Allah

Bukhsh, 2017). In relation to that, (Javed & Ilyas, 2018) indicated that the Pakistani healthcare system has been ignored since its independence 1947.

Table 1.4
Pakistan health sector indicator according to World Health Organization

Country	Rank	Growth Rate	Child Mortality	Skilled Birth Attendance	Maternal Mortality/ 100000 Live Birth	Stunting Among Children%	Health Professionals Density/100000 Population
China	1st	0.35%	10.7%	100%	27	9.4%	32
India	2nd	1.08%	47.7%	81%	174	38.4%	28
USA	3rd	0.71%	6.5%	99%	14	2.1%	118
Indonesia	4th	1.03%	27.2%	87%	126	36.4%	16
Brazil	5th	0.72%	6.5%	99%	44	7.1%	93
Pakistan	**6th**	**1.88%**	**81.1%**	**52%**	**178**	**45.0%**	**14**

Source: World Population Review (2019)

The aforesaid statistics showed that the performance of Pakistan healthcare sector in the world is not satisfactory. Moreover, despite the importance of healthcare sector for both academicians and practitioners, health care sector is less explored area came under prime focus for researchers (Javed & Ilyas, 2018). At this juncture, there is a need to examine and evaluate the performance of healthcare sector (hospitals) in Pakistan because it is a matter of life and death for the people of Pakistan.

As among the most popular strategies, TQM strategy has been confirmed by many researchers that leads organization towards better performance (Anil & Satish, 2019; Singh et al., 2018; Sweis, Asma'a, Amayreh, & Al-Sayyed, 2019). Moreover, empirical evidence also evinces that TQM leads health organization towards better performance (S. Ahmed, Abd Manaf, & Islam, 2017; Baidoun, Salem, & Omran, 2018; Javed & Ilyas, 2018; Javed, Liu, Mahmoudi, & Nawaz, 2018; R. J. Sweis, K. M. A. Ahmad, G. A. Al-

Dweik, A. R. Alawneh, & A. A. Hammad, 2016; Xiong et al., 2017). However, there is no consensus among TQM gurus, researchers, and consultants about TQM basic principles and critical success factors (CSFs). Various quality gurus included different principles, practices, and CSFs in their TQM models. Consequently, managers are confused where to start and what is required to implement TQM (Mohammad Mosadeghrad, 2014). In a similar vein, it was argued by Aquilani, Silvestri, Ruggieri, and Gatti, (2017), that previous studies with respected to critical success factors of TQM implementation are mixed and diverse. This clearly reveals a gap in the literature.

A substantial amount of research has been conducted on the relationship between TQM and organizational performance. But extant literature shows that many of the researches were carried out in developed economies (Manufacture and services industry) such as USA, Japan, UK, Spain, Italy and Australia, while few of the researches were conducted in developing economies of South Asia like Bangladesh, Pakistan, India, and Sri Lanka (Shafiq, Lasrado, & Hafeez, 2017).

In relation to that, it is supported by (H. S. Al-Dhaafri, Al-Swidi, & Yusoff, 2016; Anil & Satish, 2019), who stated that, there is a paucity of research concerning TQM in developing countries. Besides, most of the samples for the researchers conducted were taken from the manufacturing industry whereas fewer samples were taken from the service industry, especially public hospitals (Xiong et al., 2017). Moreover, In concurrence with Xiong et al. (2017), it was revealed by Javed and Ilyas (2018) that "despite this despondent situation of healthcare in Pakistan, where quality initiatives are

relatively more visible in the manufacturing, education and agriculture sectors than in the healthcare sector, not many scientific studies have been done in this context." Thus, there is a need to study the TQM in Pakistani context, with samples taken from the service industry, public hospitals in particular with a view to bridging the gap in the literature.

According to Powell (1995), TQM practices should be carefully selected because most are partial and not accurate. TQM practices thus have been selected on the frameworks of Irfan, Kee, Waheed Qureshi, and Hussain (2014), Talib, Rahman, and Azam (2011) and Mohammad Mosadegh Rad (2005) which emphasis leadership, human resource management, financial management, IT infrastructure, Customer focus/satisfaction, process management and continuous improvement are the primary dimensions that directly enhance the performance of health organization.

For effective TQM implementation leadership plays an important role (Laureani & Antony, 2018). The success and failure of TQM are first of all in the hands of leaders. Everything in the hospital is affected by leadership or management. For satisfactory health services, leadership capital plays important role in public hospitals (Mosadeghrad, Ferdosi, Afshar, & Hosseini-Nejhad, 2013). Shah and Perveen (2016), indicate that leadership deficit from top to bottom in Pakistani health care system is a most pressing problem. Therefore, there is a need to examine leadership precisely in the context of health care sector of Pakistan.

In an era of rapid and continuous change, human resource management plays an important role to gain the competitive advantage of the organization (Asrar-ul-Haq & Kuchinke, 2016; Moraa & Muli, 2018; Pantouvakis & Karakasnaki, 2017). Human resource management is pivotal for effective TQM implementation that leads organization towards excellence (Usrof & Elmorsey, 2016). Due to intense competition, globalization and advancement in technology organization pay more attention to the association of human resource management and total quality management (Izvercian, Radu, Ivascu, & Ardelean, 2014). However, in Pakistan human resource or manpower in the form of experienced healthcare professionals are really becoming scarce due to brain drain to Saudi Arabia, Middle East, USA and UK by the reason of challenging human resource policies (Shah & Perveen, 2016). Evidence point to the fact that human resource management variable should be critical; therefore, this research should investigate human resource management in Pakistani healthcare context.

In the TQM literature financial resource related TQM practices are well documented (Ebrahimi & Sadeghi, 2013). Financial resources are important organizational resources. No organization has ever succeeded without financial resources (Brigham & Houston, 2012). According to Titman (2015), to reduce financial risks and enhance the financial performance of the organizations it becomes imperative for organizations to consider financial management. Furthermore, it has been indicated by Salaheldin, Fathi, and Shawaheen (2015) that sufficient financial resources are pivotal for the successful implementation of TQM in healthcare. In spite of the critical importance of sufficient financial resources in healthcare sector government of Pakistan give no relief for the

healthcare sector in the budget as shown in Table 1.1. Moreover, Pakistan rank at 126th place in corruption index which urges researcher to examine financial management practices (budget management/financial control) to overcome budget constraints and mitigate corruption in the healthcare sector that leads healthcare organizations towards excellence. it was pointed by Nizar and Chagani (2016) that scarcity of financial resources is the main hindrance in the delivery of effective health care services in Pakistan. Financial hindrance urges researcher to examine financial management in TQM context to narrow down budget constraints in the healthcare sector of Pakistan that leads healthcare organizations towards excellence.

Improved information technology infrastructure is essential for TQM implementation in the healthcare sector (Hariharan & Dey, 2010). It is indicated by Mohapatra and Murarka (2016) that information technology helped us to improve the quality of healthcare services. In a similar vein, Barata, Cunha, and Melo Santos (2017) suggested that healthcare organizations should address IT if they want to maintain quality standards. Pakistan is far behind in the field of health technology as compared to developed countries (Nizar & Chagani, 2016). Due to aged technology, health care system of Pakistan faces many challenges in term of delivery of quality health care services. Well structure IT infrastructure can resolve these challenges of Pakistani health care system (Punjani, Shams, & Bhanji, 2014). The penetration of information technology (IT) in Pakistani health care system is quite dismal (Ahmad Hassan et al., 2017; Nizar & Chagani, 2016). In spite of the importance of IT in the healthcare sector that leads towards better innovating and digital economy, Pakistan ranked at 110 among 139

countries in the Global Information Technology Report (2016) as shown in Table 1.5. It is quite evident from the above information that penetration of information technology (IT) in Pakistan economy is quite dismal. Hence, at this juncture, it is necessary for the researcher to study information technology infrastructure in the healthcare sector of Pakistan.

Table 1.5
Global Information Technology Report (2016)

No	Country/Economy	World Rank
1	Singapore	1
2	Malaysia	31
3	India	91
4	Iran	92
5	Pakistan	110
6	Chad	139

Source: Global Information Technology Report (2016)

Public health organization effectively anticipate and respond patient (customer) needs to achieve organizational goals and ensure long term organizational survival (Xiong et al., 2017). In the literature (Ali & Alolayyan, 2013; Irfan et al., 2014; R. J. Sweis, K. M. A. A. Ahmad, G. A. Al-Dweik, A. R. Alawneh, & A. A. Hammad, 2016; Talib et al., 2011; Xiong et al., 2017) patient (customer) focus is clearly identified as an important TQM practice to implement TQM in hospitals. Furthermore, it was pointed out by Irfan et al. (2014), that patient focus is an important underlying factor to boost organizational performance of the Pakistani health care sector. In case of empirical studies, there is acute shortage of TQM literature which discuss the significance of patient (customer) focus in Pakistani health care sector i.e. (Irfan et al., 2012; Javed & Ilyas, 2018). Hence, further investigation is needed.

Sweis et al. (2019) and Pun and Yiu (2018), have emphasized on continuous improvement as an influencing practice in the implementation of TQM. Irfan et al. (2014) indicated that future research on this critical success factor is needed to refine the association between TQM and organization performance of public hospital. At this occasion, there is a need for research on potential critical success factor (continuous improvement).

Reviewing recent literature highlight that process management is a critical successful factor for successful implementation of TQM in health care institutions (Baidoun et al., 2018; Xiong et al., 2017). In spite of the critical importance of process management as supporting practice for implementing TQM approach in health care sector, this aspect of the investigation is still lacking in the literature (e.g. Irfan et al., 2012; Rateb J. Sweis et al., 2016). Moreover, Irfan et al. (2014) opined that process management is a critical success factor for TQM implementation in health care institutions of Pakistan. Thus, process management was included in this study.

In order to achieve excellent results, consideration of TQM practices from two dimensions infrastructure TQM and core TQM is indispensable (Calvo-Mora, Ruiz-Moreno, Picón-Berjoyo, & Cauzo-Bottala, 2014). Patyal and Koilakuntla (2017) claimed that TQM (ITQM/CTQM) dimensions help practitioners to understand TQM system in order to enhance organization performance (Patyal & Koilakuntla, 2017). Arguably, very little research has been specifically concerned with demonstrating that TQM dimensions in healthcare sector (e.g. S. Ahmed et al., 2017; Ali & Alolayyan, 2013; Irfan et al., 2012;

Rateb J. Sweis et al., 2016; Xiong et al., 2017). Thus, this study considers above mentioned TQM practices into infrastructure TQM (leadership, human resources management, financial management, IT infrastructure) practices and core TQM (customer focus/satisfaction, continuous improvement, process management) practices.

TQM factors such as infrastructure TQM and core TQM does not perform effectively if these factors undertake individually in TQM implementation. Thus, significant association and synergy exist between these factors i.e. infrastructure TQM and core TQM (Calvo-Mora et al., 2014). It is clearly noted by Zu (2009) that for successful deployment of TQM constitute a key mediator variable (core TQM) in the association of infrastructure TQM and organization performance. Nevertheless, so far, core TQM (continuous improvement, customer focus/satisfaction, process management) has been a missing link in the study of infrastructure TQM (leadership, human resources management, financial management, IT infrastructure) and organization performance relationship in a single model.

As the empirical results of the studies that examining the relationship between core TQM and organization performance are equivocal and inconsistent (i.e. Naeem, 2018; Psomas, Vouzas, & Kafetzopoulos, 2014). Calvo-Mora, Picón, Ruiz, and Cauzo (2013) argued that the lack of consistency between TQM-performance relationship is due to the moderating effect of contextual variables. National culture dimension power distance and uncertainty avoidance appear to be particularly powerful in explaining national culture in TQM context (Mathews et al., 2001; Tata & Prasad, 1998). To the best of researcher knowledge, none of the previous studies have discussed the moderating effect of national

culture (power distance/uncertainty avoidance) as contextual variable on the association of core TQM and organizational performance.

Balanced Scorecard (BSC) is a strategic assessment tool that use both financial and non-financial indicators to examine performance of the organizations (Varmazyar, Dehghanbaghi, & Afkhami, 2016). There were several researchers who have been using the BSC measurement to measure the organizational performance (Mehrolhassani et al., 2017; Moradi, Malekmohammad, & Jamalzadeh, 2018; Permana, 2017). BSC is a useful tool to measure performance of the health care organizations (Meena & Thakkar, 2014; Rahimi, Bahmaei, Shojaei, Kavosi, & Khavasi, 2018; Semnani & Asadi, 2016). However, only a handful of authors (e.g. Irfan et al., 2012; Semnani & Asadi, 2016; Xiong et al., 2017) were conducted a study by using the BSC method to measure performance of health organizations. Thus, this study utilized the BSC method to assess the performance of public hospitals in Pakistan.

Drawing from recourse base view (Barney, 1991; Wernerfelt, 1984) and EFQM excellence model, this study generally investigates the relationship between infrastructure TQM practices, core TQM practices and organizational performance. Specifically, this study also examined the mediating effect of core TQM on the relationship between infrastructures TQM towards organizational performance, as well as the moderating effect of national culture (power distance, uncertainty avoidance) on the relationship between core TQM and organizational performance.

1.3 Research Questions

From the Problem Statement section, critical issues which bother on the relationship between Infrastructure TQM practices and organizational performance and the role of core TQM practices and national culture (power distance, uncertainty avoidance) have been raised. In order to address the issues highlighted, the following research questions are posed:

1. Does infrastructure TQM practices positively affect core TQM practices of public hospitals in Pakistan?
2. Does core TQM practices positively affect the performance of public hospitals in Pakistan?
3. Does core TQM practices mediate the positive relationship between infrastructure TQM practices and the performance of public hospitals in Pakistan?
4. Does uncertainty avoidance moderate the relationship between core TQM practices and the performance of public hospitals in Pakistan?
5. Does power distance moderates the relationship between Core TQM practices and the performance of public hospitals in Pakistan?

1.4 Research Objectives

The main objective of this study is to the relationship between infrastructure TQM practices and performance of public hospitals in Pakistan and to examine the role of core TQM practices as a mediator on the relationship between infrastructure TQM practices and performance. Additionally, national culture (power distance, uncertainty avoidance)

as a moderator on the relationship between core TQM practices and the organizational performance. The specific objectives are as follows:

1. To examine whether infrastructure TQM practices positively affect core TQM practices of public hospitals in Pakistan.
2. To investigate whether core TQM practices positively affect the performance of public hospitals in Pakistan.
3. To determine whether core TQM practices mediate the positive relationship between infrastructure TQM practices and the performance of public hospitals in Pakistan.
4. To examine whether uncertainty avoidance moderate the relationship between core TQM practices and the performance of public hospitals in Pakistan.
5. To examine whether power distance moderates the relationship between Core TQM practices and the performance of public hospitals in Pakistan.

1.5 Significance of the Study

This study, many insights have been provided regarding the issues related to the total quality management and organization performance (public hospitals). This study is one of the pioneering studies in a developing country in tracing the enablers of TQM that leads towards better performance. From the theoretical perspective, this study provides more understanding on the relationship between infrastructure TQM and performance of public hospitals in Pakistan. To be specific, the study offers clarity on the mediating role of core TQM on the relationship between infrastructure TQM and performance of public

hospitals in Pakistan. Additionally, the study sheds more light on the moderating role of national culture on the relationship between core TQM and performance of public hospitals in Pakistan. Moreover, it contributed to the literature by examining the relationship between TQM and performance in context of a developing country. Furthermore, this study highlighted the importance of TQM practices i.e. leadership, human resource management, financial management, IT infrastructure, customer satisfaction and focus, process management and continuous improvement for defining new set of infrastructure and core TQM practices in healthcare sector of a developing country such as Pakistan. In particular, it is a notable contribution to literature, because in past literature linking of these themes with respect to TQM is very limited in number and scope. This study strengthens the EFQM model which posits that the TQM enablers of the organization lead towards better performance. In addition, this study is significant since it will add new information to the existing literature, and develop an extended body of knowledge related to EFQM. It also expects to formulate that a new version of the EFQM model, as a comprehensive model to investigate the performance of health organizations.

In practical sense the findings of this study will help government and its agencies, in making policies related to health sector in Pakistan. Other policy-makers will find the findings of this study very relevant to their policy and decision making in the area of service organizations. In other words, the findings will help policy makers in developing health policy to improve the performance of Pakistan. Furthermore, this study helps out researchers and managers in planning more effective TQM designs. The quality

practitioner will be able to put more efforts and resources to those enablers of TQM that have the most positive and significant impact on organizational performance.

1.6 Scope of the Study

The study focuses only on the public hospitals in Pakistan, with a view to investigate the relationship between infrastructure TQM and performance of public hospitals in Pakistan. Also, the study focuses on the mediation role of core TQM on the relationship between infrastructure TQM and performance of public hospitals in Pakistan, and the moderating role of national culture on the relationship between core TQM and performance. This study covers all the public hospitals in Pakistan. The study was conducted in Pakistan using survey research. The study was restricted to public hospitals that are recognized by Pakistan Medical and Dental Council (PMDC) is located in Pakistan. Particularly, a questionnaire was administered to the departmental heads of the following departments i.e. obstetrics& gynecology, general surgery, gastroenterology, orthopedic surgery, ENT (ear, nose and eye), urology, dental clinic, emergency, pediatrics, pharmacy, laboratory, dialysis, and radiography or ultrasound of the public hospitals.

1.7 Definitions of the Terms

1.7.1 Organizational Performance

As per the definition of organizational performance by Antony and Bhattacharyya (2010) "The measure that is used to evaluate and assess the success of an organization to create and deliver the value to its external and internal customers". "Organizational performance is defined as a performance output produce by firm against their desired output. The performance measurement framework to reconcile the use of financial and non-financial

measures" (Kaplan & Norton, 1992; Lingle & Schiemann, 1996; Lipe & Salterio, 2000; Schiff & Hoffman, 1996). In other words, the actual or notional outcomes (which may be financial or nonfinancial) of an organization is referred as organizational performance.

1.7.2 Total Quality Management

The management method that guarantees the relevant individual's cooperation and contribution for the generation of products and services for customer satisfaction is called total quality management. Kumar, Choisne, de Grosbois, and Kumar (2009) defined TQM as "the holistic management approach integrates all the organizational activities to satisfy customers needs and meet their expectations towards achieving overall organizational objectives". As per the definition of Juran and Godfrey (1999) "the abilities of the organization to introduce products and services that satisfy customers needs and meet their expectation".

1.7.3 Infrastructural TQM

Infrastructural TQM elements are the essential elements of total quality management (Rahman & Bullock, 2005). As per the definition of Zu (2009) "Infrastructure TQM practices that are people and culture-oriented practices focusing on organization change and development in the areas of management commitment and leadership, relationships with external customers and suppliers, and the management of human resources".

1.7.4 Leadership

Leadership is the process of influencing others to comprehend and agree towards what is required to be done and the way to do it, and it is the process of driving individual and

collective efforts towards achieving common objectives (Bass & Avolio, 1994). In the current study, leadership was measured with management's long term quality improvement process, improved activities, strategic quality based on customer requirement.

1.7.5 Human Resource Management

Human resource management practices are the activities of managing the human capital in the organization which is directly connected to the managerial functions such as planning for recruitment and selection, rewards, developing, utilizing and maximizing the capabilities and potential of employees in the organization (Dessler, 2013). The existing study, human resource management was measured by improving health service quality, training and development, implications of suggestions and recommendations and quality practices.

1.7.6 Financial Management

The process of managing the financial resources, including budgeting, accounting and financial reporting and risk management is referred as financial management practices (Gitman & Zutter, 2015). In present study, the financial management was measured through the increment in hospital fee, various operations run on debt, misallocation of funds and adequately financed of projects.

1.7.7 Information Technology Infrastructure

IT infrastructure means the technology components, applications, software, and all physical components that are used to improve operations, process, and create various capabilities within the organization (Terry Anthony Byrd, 2000). The standing study measured IT infrastructure by adding new IT infrastructure, limitless processes for the development of new IT infrastructure, keep data flexible, evolutionary changes, integration of IT systems within the system and support of new strategic initiatives.

1.7.8 Core TQM

Zu (2009) defines core TQM as **"**The technique and methodology-oriented practices including use of quality data and information, product design process, and use of statistical process control (SPC) and other process improvement techniques**".** Additionally, Flynn, Schroeder, and Sakakibara (1995) categorizes the core TQM practices in process management, customer feedback and satisfaction, quality information and improvement.

1.7.9 Process management

According to Hariharan, Saied, and Kocher (2008) "TQM practices can enhance managerial performance through the efficient organizational processes and with efficient staff to cope various management issues". Process management was measured via use of prevention controls, statistical techniques, improved customer based processes, prevention equipment maintenance, clear instruction to employees for processes.

1.7.10 Customer focus and satisfaction

As per the definition of Lurie et al. (2002) "the healthcare organizations deploy total quality management tools and techniques to increase patient satisfaction and focus more on the patient-oriented environment". In the present study, customer focus and satisfaction was measured as feedback from customers, conducting surveys for external customers, quality in processes to improve customer satisfaction.

1.7.11 Continuous Improvement

Mohammad Mosadeghrad (2014) defines TQM as **"**the quality has fundamental role for continuous improvement through employee involvement and measurement metric in the healthcare organizations**".** In the line of existing study, the continuous improvement was measured through improvement at all level of including training, daily activities, within quality and quantitative procedures and in various strategies.

1.7.12 National Culture

The profound beliefs, values, and practices that are shared by the vast majority of people belonging to a certain nation is called national culture (Van Oudenhoven, 2001). As per the definition of De Mooij and Hofstede (2010), "The national culture provides a national level variable which can then be used to explain a variation of phenomena (other aggregate data) at country level as well as across countries".

1.8 Organization of Thesis

Chapter one introduce service in the health sector of Pakistan their nature of hospitals. The chapter also more focuses on background of study, problem statement, research question, objective of the study, significant of study finally scope of study and definitions. The second chapter discusses deeply the literature review and context specific of Infrastructure TQM (leadership, financial management, human resource management and information technology management), Core TQM (customer focus satisfaction, process management and continuous improvement) Organizational Performance (customer perspective, internal process perspective, financial perspective and learning growth) and National Culture (power distance and uncertainty avoidance) which are independent, mediating, dependent and moderating variables respectively. This Chapter will also discuss open system theory. After the literature and theory studied then Chapter will discuss about research framework and draw the relationships and hypothesis development.

Chapter three also will represent a research methodology which includes research design, measurement of instrumentation, data collection procedure, population, sampling technique, and data analysis. It elaborates on the relationship between the independent and the dependent variables and discusses the relationship between national culture (power distance and uncertainty avoidance) as a moderating variable with the core TQM and organizational performance. Chapter four presents the findings of the study, which include descriptive analysis of the data, data testing and the regression analysis result and the hypotheses testing result. The last chapter five discusses the overall findings of the

study in relation to the hypotheses mediating and moderating variable, present limitation, implication of the study and identifies potential issues for future research, policy implication and recommendations.

CHAPTER TWO

LITERATURE REVIEW

2.1 Total Quality Management (TQM)

The metamorphic philosophy of Total Quality Management (TQM), that was pioneering contributed by Juran (1991) as quality trilogy of planning, control and improvement, Crosby (1991) as absolutes of quality management (conformance to requirements, prevention, zero defects and cost of quality), Feigenbaum (1990) as three (3) steps to quality (quality leadership, modern quality technology and organizational commitment) and Deming's (1986) fourteen (14) points and cycle (plan, do, check and act, also called as PDCA cycle) comprises the most important total quality management framework recommended by gurus. Quality of top management leadership, supplier quality management, employees training and development, processes design and control systems and employee involvement in quality are the main dominant emphasis of these pioneers' gurus.

In the present epoch of brisk changes in the world markets and for the economic development such as advancement in the technology, intense competition, globalization, deregulations of markets and intense competition among the competitors, the total quality management (TQM) becomes a vital tool in every sector within the world economy and it integrates all organizational functions, customers' requirements and organizational targets towards the achievement of organizational objectives. Total quality management is not only important for gaining competitive advantage but also for the reduction of

waste, increasing market share, loss and positive firm's image (Mosadeghrad, 2014). Total quality management is considered as effective tool for improving the productivity of organizations and the organizations are adopting total quality management for the fulfillment of customers' requirements (Sweis, Ahmad, Al-Dweik, Alawneh, & Hammad, 2016).

Table 2.1
Different stages of TQM and their characteristics

Stages	Characteristics
Quality Inspector (1910)	• Salvage • Sorting • Identify Sources of non conformance
Quality Control (1924)	• Corrective action • Quality manual • Self-inspection • Product testing • Quality planning • Use of statistics
Quality Assurance (1950)	• Third party approval • Quality planning • Quality manuals • Process control • Non production operation • Failure mode and effect analysis
TQM (1980)	• Focused vision • Continuous improvements • Performance measure • Management leadership • Interdepartmental barriers

2.2 Overview of Pakistan in Healthcare

Source: On the World Map.Com

Pakistan authoritatively the Islamic Republic of Pakistan grabbed self-governance in 1947 from the United Kingdom. Pakistan is a country which is located in South Asia and on crossing point of West Asia, Central Asia and East Asia. It is the sixth most crowded country on the planet with a population comprising 201 million people. To the extent zone, it is the 33rd-biggest country navigating 881,913 square kilometers. Pakistan has a 1,046 kilometer seashore along the Arabian Sea and is marine bordered with Oman as well as land bordered by the countries of China, India, Afghanistan and Iran. Pakistan is divided into five provinces, particularly, Khyber Pakhtunkhwa (KPK), Sindh, Baluchistan, Punjab and the generally smaller Gilgit–Baltistan, and moreover three territories, specifically, Azad Kashmir, FATA and the Islamabad.

In case of Pakistan, the shares of services are increasing in all sectors of economy over the period. In fact, the growth rate of services sector is higher than the growth rate of

agriculture and industrial sector. Service sector account for 47 percent sectoral share in Pakistan economy as compare to sectoral share of other three sectors such as agriculture 23 percent, industry 11 percent and manufacturing 19 percent (World Bank Report, 2017) as shown in Table 2.2.

Table 2.2
Services Sectoral Contribution in Pakistan Economy

No	Sector	Sectoral Contribution in Pakistan Economy
1	Agriculture	25
2	Manufacturing	19
3	Industry	13
4	Services	56

Source: Sectoral Share of Service Sector in Pakistan Economy World Bank Report, 2017

The performance of healthcare sector gets huge attention due to its importance as a vital sector of the economy (Ghosh & Sobek 2015). With its association with human life, healthcare sector plays one of the most important role in the society and requires constant development and investment (Cheng, Bamford, Papalexi, & Dehe, 2015). Public health sector which include child healthcare centers, maternity centers, dispensaries and public hospitals is the major source of providing healthcare services that leads citizens towards healthy life style, so they can contribute in the national development of the economy (Irfan, Ijaz, Kee, & Awan, 2012). According to the World Bank's South Asia Economic Report 2015 has placed Pakistan at the bottom of the eight economies in South Asia, projecting a moderate growth rate of 4.4% the second-lowest after Afghanistan. Health care sector becomes utmost important sector in a service based economy that served as a catalyst in a weaken economy like Pakistan as it is suggested by numerous researchers,

academicians (Amiri & Gerdtham, 2013; Bloom, Canning, & Sevilla, 2004; Gupta & Mitra, 2004; Ranis, Stewart, & Ramirez, 2000).

Table 2.3
GDP growth rate of south Asian countries 2015/2016

GDP growth rate	2013	2014	2015	2016
Afghanistan	3.7	2.0	**2.5**	**5**
Bangladesh	6.0	6.1	5.6	6.3
Bhutan	2.0	5.2	6.7	5.9
India	6.9	7.2	7.5	7.9
Maldives	4.7	5.0	5.0	-
Nepal	3.9	5.5	5.0	5.0
Pakistan	3.7	4.1	**4.4**	**4.6**
Sri Lanka	7.3	7.4	6.9	6.6

Source: World Bank's South Asia Economic Report 2015

2.2.1 Snapshot of Pakistan Healthcare Sector

According to the latest Web World Hospitals Ranking (2016), out of 20 top hospitals in South Asia, 19 hospitals are based in India, one hospital is based in Bangladesh and none has been based in Pakistan. Furthermore, according to this ranking the best public sector hospital in Pakistan rank 5,911 in the world. The aforementioned statistics showed that the performance of Pakistan healthcare sector (hospitals) in South Asian region, Asian region as well as in the world in not satisfactory. In Pakistan total number of public hospitals was 1167, basic health units 5464, rural health centers 675, child and maternity centers 733, dispensaries 5695 and TB centers was 339. Moreover, in Pakistan population per bed ratio was 1613 which is very high as compare to others countries population bed ratio such as in USA 350, Japan 85, Brazil 500, and India population bed ratio was 1050. Total number of registered dentist in Pakistan was 16652 and population per dentist ratio

was 11513. Furthermore, total number of listed doctors in Pakistan was 84711. In addition, population per doctor ratio was 1038.

Pakistan performance as compared to the regional countries (India, Bangladesh, Nepal and Sri Lanka) is lagging as all the countries have similar level of socio-economic condition as that of Pakistan (Health Sector Report Pakistan, 2018). Pakistan is the world's most dangerous place to be born, 1 in 22 babies is likely to die because of not well-funded health systems, unskilled health workers and low standard of hygiene and clean water supplies (World Economic Forum Report, 2017).

2.3 Curious Case of most Common Diseases in Pakistan

Pakistan fronting a double burden of diseases (BoD) due to communicable and non-communicable diseases. Following are the communicable and non-communicable diseases in Pakistan and discuss the situation in Pakistan, the affected population and the hurdles to get control over these diseases in Pakistan.

2.3.1 Communicable Diseases

Alameda county public health department defines the Communicable disease as "A communicable disease is one that is spread from one person to another through a variety of ways that include: contact with blood and bodily fluids; breathing in an airborne virus; or by being bitten by an insect". Communication diseases are classified into following categories.

- Tuberculosis (TB)

- HIV/ADIS
- Hepatitis
- Pneumonia and water-borne disease
- Diarrhea
- Polio
- Malaria
- Dengue.
- Maternal Morality.

2.3.2 Tuberculosis (TB)

The main communicable diseases in Pakistan are tuberculosis (Ullah, Javaid, Masud, Ali, Basit, Ahmad & Jabbar, 2017). According to Global Tuberculosis Report 2017, Pakistan ranked among the top five countries in the world with the highest tuberculosis burden sharing 56% of the total affected population of 10.4 million globally and among the three high-burden country lists of TB, TB/HIV and MDR-TB during the period of 2016-2020. Pakistan is among those countries in which at least 100000 TB cases in 2016, in top ten countries with the largest gaps between notification of new and relapse incidence TB cases and number of patients started on treatment for TB incidence in 2016 (WHO Report, 2017). In Pakistan, 430000 people affected by tuberculosis including 150000 children and 70000 people died and around the global fourth highest prevalence of multi drug tuberculosis (MDR-TB) with 95% tuberculosis deaths occur in middle, lower middle and low class (5th September, 2017 "The Nations").

2.2.3 HIV/ADIS

HIV stands for human immunodeficiency virus, by destroying white cells it harms person's immune system. AIDS stands for acquired immunodeficiency syndrome as it is

the final stage of infection with HIV. According to nationwide survey of HIV/AIDS patient, around 132000 patients are affected with HIV virus in Pakistan and deaths due to HIV/ADIS is alarmingly high as compare to other countries of the world over the last decade (1st October Dawn, 2017). In Punjab 60000, in Sindh 52000, 11000 in Khyber-Pakhtunkhwa while three reported in Baluchistan and 6000 registered in federal capital Islamabad (30th September, 2017 Express Tribune). The prevalence of HIV/ADIS, people who injects drugs 38.4%, 7.5% in transgender sex worker, 5.2% in male sex worker, 5.1% in homosexual and 2.2% in female sex workers (3th October, Pakistan Today 2017).

2.3.4 Hepatitis

Hepatitis is a big problem in developing and developed countries (Averhoff, Glass, & Holtzman, 2012). Hepatitis B and C have already affected 400 million people around the globe and 1.4 million people died due to this virus (Ashraf & Ahmad, 2015). Hepatitis B/C is a big health problem in developing countries like India, Pakistan, Sri Lanka and Bhutan (Averhoff et al., 2012). In Pakistan every 10th individual or 20 million people are affected by hepatitis B and C. Moreover, 400 Pakistani are losing life due to hepatitis every day. Around 13 million Pakistani were suffering from this Hepatitis B and C virus (Farhat M. Yasmeen, & Ahmad, 2014). According to the Pakistan Medical Research Council in 2007-08, overall 7.6% and 4.8% population suffered from hepatitis B and C and just hepatitis C respectively (Ashraf & Ahmad, 2015).

Numerous researchers have different opinions of this worse situation, hepatitis B and C virus is uncontrollable because of poor follow up and improper documentations of patients (Qureshi et al., 2013), Injecting drugs users, prisoners, security and healthcare workers (Memon et al., 2012), very costly treatment (Ashraf & Ahmad, 2015), unavailability of drugs that are more effective require shorter duration of treatment (Ashraf & Ahmad, 2015; Eriksson & Hansson, 2003; Prajogo & Hong, 2008) no follow up studies (Bosan, Qureshi, Bile, Ahmad, & Hafiz, 2010) and non-serious Government role (Ashraf & Ahmad, 2015).

2.3.5 Pneumonia and water-borne disease

According to the UNICEF (*The state of the world's children report*, 2014) at 8.6% Pakistan ranked as 26th and among highest Infant Mortality countries around the global. Pneumonia and water-borne diseases are predominant in Pakistan and it is the substantial cause of mortality and morbidity in children in the developed as well as the developing countries (Ahmad, talha Khalil, & Somayya, 2016), pneumonia is the single largest infection cause of death among children (Ali et al., 2016). Pneumonia is the number one killer of Pakistan's children as 0.7 million death each year reported due to pneumococcal diseases and 90% death are reported in developing countries and close to 60% deaths in 10 countries including Pakistan (*World Health Organization*, 2016). Ninety-two thousand children are died due to pneumonia which is alarmingly high as compare to other developing countries ("The Express Tribune," 2015). According to United Nation Children's Fund (UNICEF), Pakistan child death is almost twice as Indian child before his or her age of five (18th July, 2015 The Express Tribune), one in every 14 children

Pakistan children (7.1%) die before the age of 1 year, one in every 11 (9.1%) died before the age of 5 years (*The state of the world's children report*, 2014).

2.3.6 Diarrhea

Diarrhea is quoted as the leading infant's communicable disease and leading cause of infants and child death in Pakistan (Zahid et al., 2014). Pakistan among the top five countries which deals with the death of 350,000 children under five-year age ("The Dawn," 2013). According to UNICEF, in Pakistan, 53000 people died of diarrhea due to contaminated water annually, two-third of households was drinking this contaminated water ("The Dawn," 2018). On the other hand, *"not a single child dies of diarrhea in any developed country and if any such case happens there, it will lead to major inquiry"* said by researcher Dr. Zulfiqar Bhutta, Agha Khan University. In curious case of Pakistan is because of squatter settlements, owing to poor sanitary conditions, lack of awareness, non-serious Government in health and hygiene measures and supplies of pure water ("The Dawn," 2013).

2.3.7 Polio

Pakistan being the only prevalent polio reservoirs and one of the major hurdle towards the World health organization plan to eradication of polio on the planet (Kabir & Afzal, 2016) among one of the three, the others being Afghanistan and Nigeria are classified as "polio endemic" ("The Dawn," 2017). Marvelous attainments have been made in the worldwide fight against polio eradication especially in Pakistan by declining the polio cases from 198 in 2011, 54 in 2015, 16 in 2016 ("The Dawn," 2015). World Health

organization set goal for Pakistan to eradication of polio by 2018 but low literacy rate, poor health infrastructure, lack of planning, natural disaster, economic crises, counter insurgencies and inappropriate security to polio health workers are some obstacles in the eradication of polio (Kabir & Afzal, 2016).

2.3.8 Malaria

Globally 1.2 million people died because of Malaria each year (Qurat—UI-Ain Zia, Ali, & Haroon, 2015). Malaria is the major public health problem in Pakistan. In Pakistan 177 million people are at risk of malaria and 3.5 million people confirmed malaria cases which are reported annually. According to (*World Health Organization*, 2016), Pakistan is among the four countries that accounted 81% death globally due to Malaria, the second most reportedly disease in Pakistan is Malaria with 4.5 million cases reported annually, 65% affected to small children and 35% of adults as 65 % population is living in rural areas. To prevent the curious case of Malaria in Pakistan is not so difficult but Government behavior is no serious and it totally ignored it ("Daily Times," 2018; World Health Organization, 2016).

2.3.9 Dengue

According to World Health Organization, 2009 Dengue is the most rapidly spreading, vector bone viral diseases in the developed and especially developing countries like Pakistan. In Pakistan, Dengue is also widely prevalent now a day it become most rapidly spreading mosquito-borne viral disease (Jahan, 2011). In 2011, more than 12000 people affected in Punjab province and 126 died (29th September, 2011 Express Tribune), In

Sindh province 6000 people confirmed dengue out of which 32 deaths were reported in 2015 (June, 2015 Dawn News). In 2017, about 4500 people confirmed dengue in Khyber-Pakhtunkhwa province and 23 death were reported (Khaleej times, 2017).

2.3.10 Maternal Mortality

Women play a vital role in shaping a society but they remain at alarmingly high risk of maternal infection and mortality. Maternal health is defined by the world health organization as "health of women during pregnancy, childbirth and postpartum period". Maternal Mortality is defines as death during pregnancy, childbirth or death within 42 days after delivery. Pakistan is the 3rd highest maternal mortality burden in the world (A. Khan, Izhar, & Viqar, 2017). Maternal mortality ratio in Pakistan is alarmingly high. In Pakistan, maternal mortality ratio is approximately 340 per 100000 live births. India, Pakistan and Bangladesh account 46% of world's maternal death (Kassebaum et al., 2014). Pakistan as compared to its neighboring countries are far behind including India, Bangladesh and Sri Lanka to resolve this issue ("The Dawn ", 2018).

In Pakistan, out of 5 million women those become pregnant, 0.7 million (15%) experience medical complication and obstetrical, it is also estimated that 15% of pregnant women potentially have life threat and 1-13% will die due to lack of major surgical and medical facilities (A. Khan et al., 2017). Due to lack facilities from Government and less options to access antenatal care, mostly women will give birth without proper medical assistant of a doctor or midwife and only 52% births are attended by skilled and qualified persons ("Daily Times," 2017). Almost one out of four child is unplanned and 1/4th of the women have an unmet need for family planning, 5.6% of maternal death is due to

abortion-related contribution with annual abortion rate of 50 out per 1000 women in Pakistan ("The Dawn," 2015).

2.4 Non-communicable Diseases

A disease that cannot be transferred from one person to other person is known as non-communicable diseases such as unhealthy diet, tobacco use, cardiovascular (i.e. blood pressure/ cholesterol level), diabetes, cancers, chronic respiratory diseases. Non-communicable diseases are an emerging public health problem in Pakistan as well as in the rest of the world. Non-communicable diseases are classified into following categories.

- Hypertensive
- Diabetes
- Cardiovascular diseases
- Cancer
- Malnutrition and Obesity
- Non-Communicable Diseases and Maternal Health**.**

2.4.1 Hypertension (HTN)

Hypertension (HTN) is increasing day by day and a global problem. (Shafi & Shafi, 2017). In Pakistan, one fourth of every adult over the age of eighteen is in hypertensive (WHO Report, 2017). In Pakistan, the prevalence of hypertension is 50%, 30%, 5% to 7% in the adult above 50 years age, in people above 30 years age and among the children respectively ("The Dawn," 2017). According to a survey in 2010, only 6% control rates of hypertension in primary healthcare settings in Pakistan (Saleheen et al., 2010). The

prevalence is increasing 3% to 4% in children and severely increasing in the middle age population ("The Dawn," 2017).

Tobacco smoking is one of the world major issue and killed 6 million people annually (*World Health Organization*, 2016). According to (*US Department of Health and Human Sciences*, 2018), nearly 1,200 children start smoking each day. Smoking of tobacco represents a major health problem in Pakistan. 45% Pakistani population (38% men, 7% women) smoke tobacco (Sultana & Muhammad Asif, 2017). In Pakistan, 5000 patients admitted daily and 108000 people died annually ("The Diplomat," 2017). Smoking affects the financial costs as well as grudging the country workforce and increase burden of diseases in Pakistan (Sultana and Muhammad Asif 2017). In Pakistan, 1 out of 5 death from heart diseases was due to smoking ("The Dawn," 2017).

2.4.2 Diabetes

Pakistan among the top 7th countries in the prevalence of diabetes (*WHO*, 2017) and 150000 to 200000 patient lose lower limbs and 70% die within five years of amputations ("The Express Tribune," 2017a). Pakistan population especially in the rural areas is not prepared to fight against this virus (Umer & Iqbal, 2016). In 2010, diabetes patient in Pakistan was 7 million and with this rise rate in 2030, Pakistan is the fourth highest rate of increase behind India, China and USA (Shaw et al. 2010), estimated prevalence was approximately over 350 million in 2011 and expected to 550 million in 2030 (Shaw et al. 2010). In Pakistan, 33.5 million adults are suffering with diabetes, one in every six is a diabetic patient ("The Dawn," 2017).

2.4.3 Cardiovascular

In Pakistan cardiovascular is the leading non-communicable diseases, almost 34% of all death caused by cardiovascular diseases, per hour death is 12 due to heart attack, 200000 death annually that is 410/100000 of the population ("The Dawn," 2017). In Pakistan, CVDs diseases cause major health problem and caused 16.7 million death in 2000 and 17 million in 2008 and number of patients are increasing daily (Zubair et al., 2018). Cardiovascular disease is taking 17.5 million people lives every day, one out of 10 people died between at the age of 30 years to 70 years from CVD. In Pakistan, nearly 50000 newly born children every year, a third of children need treatment in the early childhood for heart diseases ("The Express Tribune," 2017a).

Tobacco, usage of alcohol, high blood pressure, high cholesterol, obesity, diabetes, stress, unhealthy diet and physical inactivity are the major risks for heart diseases ("The Dawn," 2017). Stroke occurrence is 250 per 100000 with increase in this number annually (Wasay, Khatri, & Kaul, 2014). Low level of activities, family history, inactive life style and Government non-serious behavior and inadequate measures to control are the major factors (Zubair et al., 2018).

2.4.4 Cancer

In Pakistan, 91000 death reported in 2013 with increasing trend annually, various kinds of cancers cases are reporting and mostly lungs cancer in men and breast cancer in women were reported ("The Express Tribune," 2015). The national level database for cancer patients are not available and cancer patient registration does not exist in Pakistan (Sikandar, Qureshi, Mirza, Khan, & Avesi, 2015). According to Punjab Cancer Registry

(the only provincial functional cancer registry center in Pakistan) listed esophageal cancer as 4th most common cancer in Pakistan (Sultana & Muhammad Asif, 2017). Oral cancer has anticipated horrendous proportion in Pakistan generally and in Karachi particularly ("The Dawn," 2017). The fatal and fast emerging diseases Brest cancer took 40000 lives every year in Pakistan ("The Express Tribune," 2018). Due to lack of centralized tumor authority in Pakistan leads unavailability of exact number of lung cancer patient ("The Dawn," 2017), according to World Health Organization cancer cause 7.6 million death in the world every year and it is also killing the Pakistani people ("Daily Balochistan Express," 2016).

2.4.5 Malnutrition and Obesity

Malnutrition or poor nutrition can damage intellectual, physical and mental health. Under-nutrition defined as incapability of families to afford minimum daily energy requirements. Globally 2.7 million children under the age of five are died due to nutritional problems. In developing countries like Pakistan, 2% to 3% of gross domestic product (GDP) lost by malnutrition (Tanweer, Zaman, Fatima, & Javed, 2015). In Pakistan, 50% women and children are malnourished ("The Express Tribune," 2017a). According to the national Nutrition Survey 2011, 1/3rd of children are under weight, 44% are stunted, 15% are wasted, 1/2nd of them are anemic and 1/3rd have iron deficiency anemia. Poverty, unhealthy, unavailability and food insecurity are the main reasons (10th February, 2017 Dawn News). Malnutrition results in the economy loss of 3% greater than the energy crises 2% loss ("The Express Tribune," 2017a).

According to National Nutrition survey 2011, Pakistan has persistently high rate of malnutrition and this condition is caused by inadequacy, excess or imbalance of nutrients (Tanweer et al., 2015). In Pakistan, malnutrition prevalence is in low middle class (*World Health Organization*, 2016) 5th most populated country in the globe (*WHO*, 2011) major portion of population is unable to buy nutritional requirements (2350 calories per day) (*UNICEF Report* 2012), high mortality rate of 137/1000 births ("UN Report," 2010) cause 35% of deaths (*UNICEF Report* 2012).

On the other hand, over nutrition means oversupplied of nutrients or large consumption of nutrients that are required for development, growth and metabolism. Over nutrition leads towards obesity. Nearly 2.1 billion or 30% of world's population is obese or overweight ("The Nation," 2017). More than one out of 10 people are obese with weight related health problems ("The Dawn," 2017). Obesity is representing a major public health issue in developed countries as well as in developing countries like Pakistan (Tanzil & Jamali, 2016). According to the Global Burden of Diseases study, in term of obesity Pakistan ranked among the 9th highest country as compare to the rest of the world ("The Express Tribune," 2014). Obesity in Pakistan affected all age groups, particularly women from urban population show higher ratio as compared to men and women in rural areas, environmental changes, lifestyle modifications, high density diets and less physical activity are some factors leads towards obesity (Tanzil & Jamali, 2016).

2.4.6 Non-communicable diseases and Maternal Health.

Around the global, we are witnessing epidemiological shift from the direct causes to indirect causes of maternal death (Bohren et al., 2014). In reproductive health, Obstetric transition plays vigorous role to address the root causes of poor maternal health and understanding of women's health life circle while pregnancy (Hodin et al., 2016). Diabetes anemia, obesity and hypertensive pregnancy disorder are some high risk factors and dangerous for childbirth-related complications for newborns and children born with NCDs also leads towards adverse health outcomes later in life (Zhu et al., 2015).

In the developed and particularly in the developing countries like Pakistan, 65% of women's deaths are caused by non-communicable diseases (NCDs) (WHO & UNICEF Report, 2016). Cardiovascular disease indirectly causes pregnancy-related mortality more often associated with maternal and late maternal mortality as compared previously. In developing countries particularly middle class countries like Pakistan, indirect conditions for the female are not suitable and no management or corrective measures must be taken (Firoz et al., 2018).

2.5 Definitions of TQM

Total quality management (TQM) was defined by various authors over the years. However, no single definition can capture the whole picture of it. There has been a lack of agreement or consensus on what TQM is. The TQM definition varies on approach and the method taken towards quality (Eriksson & Hansson, 2003; Lemak, Reed, & Satish, 1997). The previous studies conducted by different scholars and evolved from work of

various gurus. There are many definitions offered and put forward by various scholars and gurus in different situations. The analysis of these definitions suggested that they all are not different and emphasis of the main concepts such as continuous improvement, customer focus, process management and human resource management (Curry & Kadasah, 2002; Prajogo & Hong, 2008).

According to Dale, Van Der Wiele, (2003) defines TQM as the management philosophy to satisfy the customer needs, wants which exceed their expectations, ensured by the corporation and the participants of all the individuals of the organization. In addition, Baird, Jia Hu, and Reeve (2011) defined TQM as the integrative philosophy of management of continuous improving the product / service quality and processes to meet customer satisfaction. Yadav et al. (2014) stated that TQM is a structured approach to plan and implement a constant organizational improvement process for the improvement of the products and services.

Table 2.4
Different definitions of TQM as reported in literature

Author (s)	Definition
(Edwards, 1986)	A management philosophy which develops all management principles and practices from the belief that continual improvement of quality is the key to success
Oakland (1989)	An approach for improving the competitiveness, effectiveness and flexibility of an organization.
Berry (1991)	A total corporate focus on meeting and exceeding customers' expectations and significantly reducing costs resulting from poor quality by adopting a new Management system and corporate culture.
Oakland (1993)	A new way of managing to improve effectiveness, flexibility and competitiveness of a business to meet customers' requirements.
Zairi et al. (1994)	A positive attempt by the organizations concerned to improve structural, Infrastructural, attitudinal, behavioral and methodological

Table 2.4 (Continue)

Author (s)	Definition
	ways of delivering to the end customer, with emphasis on consistency, improvements in quality, Competitive enhancements, all with the aim of satisfying or delighting the end Customer.
Roosevelt (1995)	A strategic architecture requiring evaluation and refinement of continuous improvement practices in all areas of business.
Dahlgaard, Kristensen, and Kanji, (1998)	A management process which any organization can implement through long term planning, by using continuous quality management plans which lead the organization towards the fulfillment of its vision.
Mohanty and Lakhe (2002)	An approach for continuously improving the quality of goods and services delivered through the participation of 'all' levels and functions of the organizations.
Palo and Padhi (2005)	An integrated approach to bring continuous improvement in products and services using proper tools, technology and training to meet customer's expectations on a continuous basis.
Lee, Ooi, Tan and Chong (2010)	A business management strategy seeking to improve the quality of organizational management, competitiveness and providing value to customers.

2.5.1 Benefits of TQM

In General, the successful implementation and the desired results achieved from it are considered as the core benefit of TQM. To measure these results various approaches are used; the cost of poor quality (Ahire & Dreyfus, 2000; Basu, 2014; Huang & Lin, 2002; Svensson & Wood, 2005) is the commonest approach used to estimate result. As per many researchers (A. Abdullah, 2010; Benavides-Velasco, Quintana-García, & Marchante-Lara, 2014; Corredor & Goñi, 2011; Duran, Çetindere, & Şahan, 2014; Kannan & Tan, 2005; V. Kumar, Choisne, de Grosbois, & Kumar, 2009; Salaheldin, Fathi, & Shawaheen, 2015; Tannock, Krasachol, & Ruangpermpool, 2002) the most paramount goal of TQM is to improve organizational performance.

Likewise as per the global agenda of sustainable development 2030, the adoption of total quality management (TQM) is the main tool to get benefit of sustainable development. (Izvercian, Radu, Ivascu, & Ardelean, 2014; Todorut, 2012; Wickenberg-Bolin, Göransson, Fryknäs, Gustafsson, & Isaksson, 2006) enhancement of production and customer performance (A Agus & Hassan, 2011), amalgamation of TQM on operational performance (Baird et al., 2011), implementation of TQM and its positive impact on labor productivity (Benavides-Chicón & Ortega, 2014; Mohammad Mosadeghrad, 2013), positive impact on innovation in the service sectors (Bon & Mustafa, 2013; Feng, Prajogo, Chuan Tan, & Sohal, 2006; Perdomo-Ortiz, González-Benito, & Galende, 2006) and positive impact on educational system (Militaru, Ungureanu, & Chenic, 2013; Töremen, Karakuş, & Yasan, 2009).

Table 2.5
A list of selected benefits of TQM as reported in literature

TQM Benefits	References
Reduced cost of operation	(Hariharan, Saied,& Kocher, 2008; Hendriks and Singhal 1997; Oakland 1993),
Improved employee involvement	(B. G. Dale & Cooper, 1994; W. Lewis, Pun, & Lalla, 2005; Talib, Rahman, & Qureshi, 2010)
Improved communication	(Anjard, 1998; Antony, Leung, Knowles, & Gosh, 2002; B. G. Dale & Cooper, 1994; W. Lewis et al., 2005)
Increased productivity	(E. Anderson, 1995; Antony et al., 2002; Mohanty & Lakhe, 1998; J. S. Oakland, 1989; Samson & Terziovski, 1999)
Improved quality and less rework	(Antony et al., 2002; Mohanty & Lakhe, 1998)
Improved customer satisfaction	(E. Anderson, 1995; Antony et al., 2002; Reed, Lemak, & Montgomery, 1996; Samson & Terziovski, 1999; Talib et al., 2010)
Improved sustainable competitive advantage	(Antony et al., 2002, Holjevac 2008, Powell, 1995)
Promoting continuous improvement and innovation	(Bounds, 1994; Corbett & Rastrick, 2000; Reed et al., 1996; Talib et al., 2010)

Table 2.5 (Continue)

TQM Benefits	References
Enhanced customer service and loyalty	(E. Anderson, 1995; Reed et al., 1996; Samson & Terziovski, 1999)
Improved organizational management	(R. Kumar, Garg, & Garg, 2011; J. S. Oakland, 1989; Samson & Terziovski, 1999)
Improved employee relations and satisfaction	(E. Anderson, 1995; Holjevac, 2008; Samson & Terziovski,1999)
Improved financial performance	(Christensen, Kristiansen, Hansen, & Nielsen, 1995; Hendricks & Singhal, 1997; Ismail Salaheldin, 2009; Reed et al., 1996; Talib et al., 2010)
Improved process and performance management	(Hendricks & Singhal, 1997; W. Lewis et al., 2005)
Improved products and services	(Garvin, 1998; Hendricks & Singhal, 1997)
Improved employee morale and reduced errors	(Ab Rahman, Shokshok, & Abd Wahab, 2011, R. Kumar et al., 2011; Salegna & Fazel, 2000; Walsh, Hughes, & Maddox, 2002)
Increased social responsibility and ethics	(Holjevac, 2008)

2.5.2 Elements of TQM

Numerous studies (Karapetrovic & Willborn, 2000, Gonzalez, Walsh, Hughes, & Maddox, 2002; Padron, Akdeniz, & Calantone, 2014; Hua & Lee, 2014; Adina-Petruţa & Roxana, 2014) identified those core elements that were constituted in TQM paradigm. Top management commitment, employees involvement and continuous improvement are three key reasons for the successfully implementation of TQM (Huang & Lin, 2002). According to Tari 2005, empirical studies, quality gurus contribution and quality award models are different sentiments to observe these core elements. Total quality management (TQM) concept is used to transmit organizational wide efforts that incorporate the whole workforce for continuous improvement for customer satisfaction.

Table 2.6

Summary of TQM Core Elements Development Studies

Core Elements	Author/s (Year)
Continuous	Adina-petruta and Roxana, 2014; Walsh, Hughes and Maddox 2002.
Process Improvement	Atkinson, 1994; Barber, Munive-hernandez, & Keane, 2006. Cachay & Abele, 2012; Choi, 1995; Christofi et al., 2008; Ellis & Castle, 2010; Intra & Zahn, 2014; Irani, Beskese, & Love 2004,Jonsdottir, Ingason and Jonasson, 2014; Frances, Boer, & Gertsen, 2003; Jung & Wang, 2006; Krittanathip, et al., 2013, Krittanathip, et al., 2013.
Quality Assurance	Abdous, 2009; Alkafaji, 2007; Cheng, 2003; Lim, 2008; Cukier, et al., 2012; Jabnoun, 2002; Karapetrovic and Willborn, 2000; Lau & Tang, 2009; Law, 2010; Timothy, 2008; Mergenthaler, George 2008; Weinberger & Qaim, 2009; Moldovan, 2012; Moore, et al., 2007

2.5.3 Literature review of TQM competing studies

Within the management sciences (management, operations management, public management, public administration, and marketing) literature, quality management (QM) has been one of the most popular research areas over the last two decades. QM is an integrative management philosophy aimed at the continuous improvement of performance. Consequently, the impact of QM practices on organizational performance has been the subject of constant interest and challenge among researchers. Managers, researchers and QM practitioners are continuously interested in and concerned about the exact nature of TQM–performance relationships (Sureshchandar, Rajendran, and Anantharaman 2002) and which QM practices to adopt to achieve successful implementation. Thus, QM practice–performance the relationships need to deep and more

extensive investigation. To find what is contributing to the knowledge (TQM/Performance) and what is yet to be contributed to the knowledge researcher conduct a systematic review.

2.6 Systematic Review of Literature

The objective to conduct literature review is based on dual purpose. Firstly to explicitly summarize the current research pattern and secondly for the identification of the gap in the existing literature with proposition of future research agenda. The current study has adopted the systematic literature review approach of the literature review. The current study consists all the published papers that have been published between 2000 to 2019 by using the Google scholar database journals. Figure 2.1 explains the research approach used for the current study. Several keywords have been used in the systematic review to extract the data required for the research like "Total quality management", "TQM", "Balance scorecard", "Core TQM", "Infrastructure TQM". The result of the aforementioned criteria is 136 articles from 61 different journals. 100 articles out of 136 are included in the research by cross checking from titles, abstracts and the keywords. While conducting the systematic review, literature from working papers, master and doctoral dissertations and textbooks have been not included by researcher (Ngai, 2005).

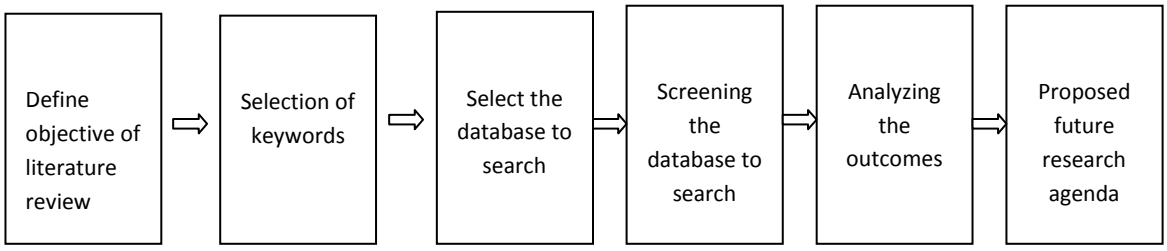

Figure 2.1: Flow diagram of research approach

Author	Sector	Country	Findings
Anderson, Rungtusanatham et al. (1995)	Manufacturing.	USA	There is a significant relationship exists between employee fulfillment and customer satisfaction but continuous improvement has no significant effect on customer satisfaction.
Flynn, Schroeder et al. (1995)	Manufacturing.	USA	There is a positive relationship among Statistical control/feedback and product design process and perceive quality performance of market.
Choi and Liker (1995)	Manufacturing.	USA	Finding of this research states that communication leads towards employees has significant relationship with CI effectiveness.
Albers Mohrman, Tenkasi et al. (1995)	Manufacturing and services.	USA	Production oriented TQM practices have influenced only on manufacturing companies and associated with work and employee related performance but Core practices have influenced on both manufacturing and service companies and their outcomes and there is a positive relationship between TQM practices and financial performance of companies.
Powell (1995)	Manufacturing and services.	USA	TQM practices cannot be copied easily by competitors due to several components like open organization culture, empowerment of employee, and executive commitment and these practices are the source of competitive advantage and the well performance of firms from competitors.
Adam, Corbett et al. (1997)		Europe, North	Quality improvement effects the quality and financial performance of

		America, and Asia	firm but it does not depend upon only quality improvement approach, improvement in quality and better financial performance were depend on multiple factors as knowledge about quality, senior management involvement and employee's compensation.
Grandzol and Gershon (1998)			Customer focus, internal/ external cooperation, public responsibility influence customer satisfaction positively. Continuous improvement affects the operational performance while operation performance influences the financial performance of the firms. Employee fulfillment negatively effects the customer satisfaction.
Forza and Filippini (1998)	Manufacturing.	Italy	Process control leads towards quality conformance and customer focus has positive impact on customer satisfaction.
Ahire and O'shaughnessy (1998)	Manufacturing.	USA	Firms produce high quality products if they have high top management commitment rather low top management commitment and also results states that empowerment, internal quality information usage, supplier quality management and most importantly customer focus has significant and positive effect on quality of the product.
Choi and Eboch (1998)	Manufacturing.	USA	TQM practices have more significant effect on customer satisfaction as compare to plant performance and plant performance has insignificant impact on customer satisfaction.
Rungtusanatham, Forza et al. (1998)	Manufacturing.	USA	Employee fulfillment shows no relationship with customer's satisfaction while continuous

			improvement has significant relationship with customer satisfaction.
Solis, Rao et al. (1998)	Manufacturing and services.	Taiwan	Manufacturing firms perform well as compare to services firms to implement the six out of eight quality practices and achieve better results of quality than services firms.
Dow, Samson et al. (1999)	Manufacturing.	Australia and New Zealand.	TQM techniques like customer focus, employee commitment and shared have vision positive relationship with quality performance.
Samson and Terziovski (1999)	Manufacturing.	Australia and New Zealand	Customer focuses, Employee management, empowerment of employees, leadership have significant positive relationship with outcome of organization.
Ho, Duffy et al. (1999)	Manufacturing.	Hong Kong	Soft TQM includes role of top management, employee relations, training and role of quality department while hard TQM includes product design, process management, supplier quality management and quality data and reporting and Soft TQM techniques influence the quality outcomes of firms through the mediation effects of hard TQM techniques.
Das, Handfield et al. (2000)	Manufacturing.	USA	In the presence of international competition as moderator, quality practices have positive effect on customer satisfaction and customer satisfaction leads toward high firm performance.
Wilson and Collier (2000)	Manufacturing.	USA	Leadership has no positive and significant relationship with the financial performance of the firm through information analysis and process management but the process

			management has more significant and positive relationship with customer satisfaction than financial performance.
Ahire and Dreyfus (2000)	Manufacturing.	USA	To achieve, maintain and enhance quality results of the firms, firms should maintain stability in their design and process management struggles by monitoring continuously to take the benefits for long term because these practices influence the quality performance of firms.
Sun (2000)	Manufacturing and Services	Hong Kong (researcher), Norway	At the same time all TQM indicators provide assistance to the firms to enhance the satisfaction of their customers and performance of their businesses rather than one.
Brah, Li Wong et al. (2000)	Services.	Singapore	TQM instruments as quality improvement rewards and customer focus helps the services firms to enhance their financial and operating performance and there is no significant relationship between experienced and inexperienced services firms to apply the TQM instruments.
Douglas and Judge Jr (2001)	Manufacturing.	USA	There is a significant and positive relationship between accomplishment of TQM elements and the financial performance of the firms.
Ho, Duffy et al. (2001)	Manufacturing.	Hong Kong	Soft TQM techniques influence the quality outcomes of firms through the mediation effects of hard TQM techniques
Cua, McKone et al. (2001)	Manufacturing.	USA, Italy, Japan,	Elements of TQM practices have equally significant relation with the

		Germany, UK	high level of outcomes of manufacturing plants.
Agus (2001)	Manufacturing.	Malaysia	Commitment of top management, training, competition, product quality, features etc. have positive influence on overall financial performance of the firms.
Matsui (2002)	Manufacturing.	Japan, US, UK, Italy, Germany	Quality management practices remain same among different industries, it also effects to the operation performance of the firms and these techniques help the firm to find the competitive outcomes for the firms.
Brah, Tee et al. (2002)	Manufacturing and Services	Singapore	There is a significant relationship among TQM practices, size of firms, and duration of TQM implementation with firm's performance and there is no Significant relationship between nature of firms and quality performance.
Huarng and Chen (2002)	Manufacturing.	Taiwan	There is a significant relationship between TQM philosophy, TQM techniques and firm's performance. They also provide help to the organization to reduce the cost and enhance the performance of firm.
Chin, Pun et al. (2002)	Manufacturing.	China (Shanghai)	The factors categorized in soft and hard TQM variables. Soft variables include strategic planning, leadership, education and training, existing organizational culture, top management commitment, culture change, employee involvement and human resource development while hard variable includes tools and techniques, quality system, process analysis and improvement, supplier chain management, internal

			performance measurement, external performance measurement, communication and recognition and reward.
De Cerio (2003)	Manufacturing.	Spain	TQM techniques, Product design, product development and human development practices have significant and positive impact on operational performance of firms.
Lee, Rho et al. (2003)	Manufacturing.	Korea	There is a significant relationship between quality information and analysis, quality planning and process management. Customer and market management effects the human resource management while human resource management and process management influences the quality outcomes.
Prajogo and Sohal (2003)	Manufacturing and non-Manufacturing	Australia	There is a significant and positive relationship between TQM and quality performance as well as product and process Innovation performance.
Claver, Tari et al. (2003)		Spain	Quality management factors have significant relationship with performance measure.
Kaynak (2003)	Manufacturing.	USA	There is a positive relationship between quality management and financial and marketing outcomes with the mediation effect of operating outcomes. Process management, quality information and supply quality management influence positively to the quality performance and inventory performance respectively.
Lai and Cheng (2003)	Manufacturing, construction, public utilities and services.	Hong Kong	Results shows that public utilities and services industries implement the TQM practices more accurately and achieve higher performance as

			compare to manufacturing and construction industries. The firms, who implement more quality management practices, achieve higher quality performance.
Hasan and Kerr (2003)	Services.	Australia	The most important quality management practices like commitment of top management and customer satisfaction more influence the performance of the services companies as compare to other total quality management practices.
Sánchez-Rodríguez and Martínez-Lorente (2004)	Manufacturing.	Spain	Quality management practices are significantly correlated with each other. There is a significant correlation between TQM practices and purchasing operation performance of firms, satisfaction of internal customers, and business outcomes.
Lau, Zhao et al. (2004)	Manufacturing and services	China	Firms that have more intention to implement the TQM practices and put their efforts to implement them have overall higher performance as compare to other firms.
Fuentes-Fuentes, Albacete-Sáez et al. (2004)	Manufacturing	Spain	Organization environment has positive influence on implementation of TQM practices and overall firm's performance and TQM techniques also affect the overall firm's performance.
Prajogo and Sohal (2004)	Manufacturing and non-manufacturing firms.	Australia	This study showed two different TQM dimensions organic and mechanistic TQM has different association with firm performance in quality and innovation.
Agus (2004)	Services.	Malaysia	Results states that there is a significant and positive relationship between TQM practices, Overall

			performance of services organizations and customer satisfaction.
Lai and Cheng (2005)	Manufacturing, services, construction and public utilities.	Hong Kong (Chinese researcher)	Results of mixed research indicate that both quality management and marketing practices influence each other and also influence the performance of respective firms.
Rahman and Bullock (2005)	Manufacturing.	Australia and New Zealand	There is direct as well as indirect relationship between soft TQM and performance and soft TQM has positive relationship with hard TQM techniques.
Yeung, Cheng et al. (2005)	Manufacturing.	China and Hong Kong	Quality management techniques based on context like customer focus and process management have more effects to improve the performance of the electronics firms as compare to other quality management techniques like leadership and cultural elements.
Prajogo (2005)	Manufacturing and services.	Australia.	Quality management practices influence positively to the performance of both type of firms and there is almost similarity in the performance of organizations irrespective of different sectors.
Lin, Chow et al. (2005)	Manufacturing.	Hong Kong and Taiwan.	Both countries results correlate with each other and combination of practices of quality management with supplier's selection and participation significantly affects the performance of firms and customer satisfaction.
Kannan and Tan (2005)	Manufacturing.	Canada	There is a significant and positive relationship between purchasing practices of quality management and purchasing performance as well as

			business outcomes.
Kaynak and Hartley (2005)	Manufacturing.	USA	Implementation of integrated approaches JIT, SCM, TQM influenced significantly to the outcomes of firms and also shows the engagement and attention of firms on quality.
Sila and Ebrahimpour (2005)	Manufacturing (chemicals, fabricated, machinery, computer, electric, transportation, construction).	USA	There is a direct, significant and positive relationship between two TQM practices leadership and process management and performance of firm's businesses.
Parast, Adams et al. (2006)	Manufacturing.	USA and Mexico	Findings states that techniques of quality management are not associated with each other country. Social responsibility and supplier quality significantly influence the divergence outcomes of quality and customer satisfaction of both US and Mexico countries.
Sharma (2006)	Manufacturing, services and construction.	Australia	Results indicate that attention on quality management practices by larger firms' more than smaller and medium business. There is a significant relation between the quality management practices and performance of the firms.
Prajogo and Brown (2006)	Manufacturing and non-manufacturing.	Australia	Techniques of quality management affect the performance of organizations. Firms show different performance that have been adopted the TQM practices for long time period than other firms that have low commitment with quality management.

Prajogo and Sohal (2006)	Manufacturing and non-manufacturing	Australia	Findings shows that TQM has influenced to innovation performance insignificantly but technology research and development effects significantly to the outcomes of firms with respect both quality and innovation.
Prajogo and Sohal (2006)		Australia	There is a significant and positive relationship between TQM and differentiation strategy of firms and results also show that TQM plays partially mediating role and influence the relationship between differentiation strategy of firms and outcomes of firms.
Feng, Prajogo et al. (2006)	Manufacturing.	Australia and Singapore.	The results cross-validate the different dimensions of TQM and specifies that soft TQM are leadership and people management while hard TQM are process management, customer focus, strategic planning and information analysis.
Fuentes, Montes et al. (2006)	Private	Spain	Results show that combination of TQM practices and organizational strategies provide help to organization to increase the performance in terms of financial and operational.
Lakhal, Pasin et al. (2006)	Manufacturing (plastic transforming)	Tunisia	There is a significant and positive relationship between TQM practices and outcomes of organization. Results also state that infrastructure practices significantly directly influence the operational outcomes of organization and by using the mediating role of core practices; infrastructure practices influence the operation and financial outcome as

			well as product quality of firms.
Brah and Ying Lim (2006)	logistics	Singapore	Finding indicates that combine implementation of both TQM techniques and technology significantly and positively link with the overall outcomes of firms and show higher performance than other low technology firms.
Thai Hoang, Igel et al. (2006)	Manufacturing and services	Vietnamese	There is a positive relationship between the techniques of TQM (leadership and people management, process and strategic management, open organization) and innovative outcomes of organization.
Lin and Chang (2006)	Manufacturing (electronic and computer)	Taiwan (Chinese researcher)	TQM techniques have strong and positive relationship with objectives of manufacturing and outcomes of manufacturing firms. The organizations that use the more and unique TQM techniques have higher outcomes both in achieving the manufacturing objectives and effective outcomes than other firms that adopt the low TQM techniques.
Demirbag, Lenny Koh et al. (2006)	SME of Textile	Turkey	There is a strong and positive relationship between market orientation and outcomes of SME's; TQM and outcomes of SME's. By using the mediating role of TQM, market orientation positively and significantly influences the outcomes of SME's.
Molina, Llorens-Montes et al. (2007)		Spain	There is a positive relationship between techniques of quality management and knowledge transfer. Quality management techniques and knowledge transfer provide help to the organizations to gain competitive advantage.

Sila (2007)	Manufacturing and services		TQM influence to overall outcomes of organization directly and significantly excluding financial and market results.
Ou, Liu et al. (2007)	Information sector (SME).	Taiwan	TQM directly influence the operating outcomes of organizations. Advancement in operating performance provides help to increase customer's satisfaction and enhance the financial outcomes of organizations.
Yusuf, Gunasekaran et al. (2007)	Manufacturing and services.	China.	TQM techniques base on comprehensive imposition positively and directly influence the outcomes of Chinese organizations.
Tarí, Molina et al. (2007)	Manufacturing and services.	Spain	All the TQM practices except supplier and process management directly and positively influence the quality performance of Spanish both types of firms.
Kaynak and Hartley (2008)	Manufacturing.	USA	A supplier quality management technique (customer focus and supplier management) has positive relation with outcomes of firms. Some QM techniques play a role of mediator to influence the outcome of firms.
Zu, Fredendall et al. (2008)	Manufacturing.	USA	Combinations of six sigma and quality management techniques provide help to organizations to improve the outcomes.
Appiah Fening, Pesakovic et al. (2008)	small and medium enterprises.	Ghana	Findings suggest that techniques of quality management influence significantly to enhance the outcomes of SME's.

Sharma and Gadenne (2008)	Manufacturing and construction.	Australia.	Results states that trained employees and effectiveness of marketing programs correlates with satisfaction of customers. Measurement and open organization and philosophy of top management and effectiveness of processes of marketing provide help the organization to enhance their competitive position and overall results of firms.
Martínez-Costa, Martínez-Lorente et al. (2008)	Industrial.	Spain.	Implementation of techniques of TQM and ISO 9000 positively influence the outcomes and firms that have internal motivation for ISO 9000 put more efforts to implement the TQM techniques and show higher performance.
Prajogo and Hong (2008)	Manufacturing	South Korea	There is a significant and positive relationship between combination of techniques of TQM and research and development outcomes both on product quality and innovation.
Macinati (2008)	service (public health-care)	Italy	Quality management techniques enhance the goodwill of hospitals and satisfaction of patients.
Arumugam, Ooi et al. (2008)	Manufacturing	Malaysia	There is a strong relationship between two prime TQM techniques (customer focus and continuous improvement) and quality outcomes of manufacturing firms who had achieved ISO certificates.
Carlos Pinho (2008)	Manufacturing.	Portugal	Findings indicate that TQM techniques and innovation that have positive relationship with outcomes of SME's and there is also positive relationship between TQM and customer orientation; customer orientation and innovation. Results

			also state that there is not any relationship between TQM and innovation; customer orientation and outcomes of SME's.
Hemsworth, Sánchez-Rodríguez et al. (2008)	Manufacturing.	Spain	There is a significant and direct relationship between purchasing related techniques of quality management and elements of related information system and purchasing outcomes respectively. Purchasing related quality management components indirectly influence the purchasing outcome through the mediation effect of purchasing related information system.
Fotopoulos and Psomas (2009)		Greek	The study proved that improvement in quality is firstly associate with soft TQM and secondly through hard TQM.
Gadenne and Sharma (2009)	Manufacturing and construction.	Australia	The results suggest that firm performance is influenced by soft and hard TQM practices and also suggest that efficiency improvement, employee and customer involvement and employee training leads towards customer satisfaction while employee and customer involvement also leads towards competitive edge of the organization.
Zu (2009)	Manufacturing.	USA	There is a direct relationship between core QM and quality performance and there is indirect relationship between infrastructure QM and quality performance.
Kumar, Kumar et al. (2009)	Manufacturing and services.	Canada	There is a positive relationship between auspicious practices of total quality management and all elements of outcomes of firms.

Arauz, Matsuo et al. (2009)	Manufacturing.	Japan	Results also state that improved quality performance relies on core techniques and core techniques based upon instrumental elements of quality management.
Ismail Salaheldin (2009)	Industrial (SME)	Qatar.	With the help of successful imposition of TQM practices, there is significant and positive relationship between TQM elements and operational and financial performance of SME's. Results also shows that operational outcomes of SME's significantly influence the organizational outcomes.
Bou-Llusar, Escrig-Tena et al. (2009)	Manufacturing and services.	Spain	Findings indicate that social and technical elements and EFQM model related with TQM strategies influence the performance of firms by enhancing it in an effective way.
Sadikoglu and Zehir (2010)	Manufacturing.	Turkey (Marmara)	There is positive relationship between TQM techniques, outcomes of firms and employee and innovation outcomes. Results also indicate that employee and innovation performance plays a role of mediator and influence the techniques of TQM an outcomes of firms slightly.
Miyagawa and Yoshida (2010)	Manufacturing.	Japan and USA	There is a significant relationship between techniques of TQM and overall outcomes of manufactures that possessed the Japanese quality management practices. Finding also indicates that properly imposed TQM techniques provide help to the firm to enhance the level of outcomes.
Yong Xiang, He		China	Results states that leadership has a

et al. (2010)			direct relationship with outcomes of firm and leadership effects outcome of firm indirectly with the help of focus of market, customer and human resource and information analysis and there is significant relationship between process management and outcomes of firms.
Corredor and Goñi (2011)	Manufacturing	Spain	Results state that organizations that are premature to apply TQM techniques in their organizations perform better than those firms who delay to apply TQM techniques.
Mellat Parast, Adams et al. (2011)	petroleum production	Iran (Researcher USA)	There is a significant relationship between involvement and training of employees and top management support; and operational results of Iranian petroleum production related organization and there is no significant relationship between customer orientation and business outcomes.
Hung, Lien et al. (2011)	High Tech industrial sector.	Taiwan	There is a significant and positive relationship between TQM and organizational learning; organization learning and innovation outcomes of Taiwan high tech firms. Through the slightly mediation effect of organizational learning, TQM influence the innovation outcomes.
Koc (2011)	SME	Turkey (Istanbul)	TQM techniques significantly influence to internal and external failure and outcomes of firms. TQM elements like quality system, customer focus and employee involvement directly and significantly influence to the outcomes of firms.
Idris (2011)		Malaysia	Firms that have large size have

			higher potential to get better performance from smaller firms and firms size act as moderator in this connection.
Khan (2011)	Services.	Pakistan	Results states that there is a significant and positive relationship between TQM and outcomes of firms and management competencies play a role of moderator that effect the relationship between techniques of total quality management and outcomes of services firms.
Sánchez-Rodríguez and Rafael Martinez-Lorente (2011)	Manufacturing	Spain	Results states that there is a direct and significant relationship between information technological measures and TQM practices and information technologies influence the quality outcomes of organization via TQM practices.
Phan, Abdallah et al. (2011)	Manufacturing	Japan	Results state that 11 quality management techniques of Japan act as source to gain competitive advantage and maintain their competitive position of manufacturing organization of Japan in both time durations.
Konecny and Thun (2011)	Manufacturing (Automotive, electronics and machinery related plants)		With the assistance of employee involvement and HR techniques, TQM and TPM significantly and positively influence the outcomes of plant and helps to improve the outcomes of plant
Baird, Jia Hu et al. (2011)	Manufacturing and services	Australia	Cultural factor (team work) increase the intention of organizations to use the more TQM techniques while three TQM elements (quality data and reporting, process and supplier quality management) significantly influence operational outcome and

			are the source of achieving higher outcomes .
Vanichchinchai and Igel (2011)	Automotive industrial sector	Thailand	Findings indicate that there is a direct, positive and significant relationship among application of TQM, SCM and supply chain outcomes of firms. Results also state that application of supply chain management mediate the relationship indirectly, positively and significantly between TQM techniques and supply chain outcomes of firms.
Agus (2011)	Manufacturing.	Malaysia	Finding state that TQM significantly influence to the production outcomes and customer related outcomes. TQM application provides help to the Malaysian manufacturing organizations to enhance their performance.
Wang, Chen et al. (2012)	Hotel	China	There is a positive and direct relationship between TQM and hotel performance; and market orientation and outcomes of hotel. Market orientation mediates the relationship between TQM and outcomes of hotels. External elements moderate the relationship between TQM, MO and outcomes of firms.
Abdullah and Tari (2012)	Manufacturing(Electronics)	Malaysia	Findings indicate that that soft TQM has direct and indirect positive relation and hard TQM worked as a mediator.
Al-Khalili and Subari (2013)	Manufacturing	Malaysia	It is find that these two dimensions (hard and soft TQM) have positive relation and can be used by quality assurance manager for better implementation if uses correctly.

Calvo-Mora, Picón et al. (2013)	SME's	Spain	The results suggest that 3 soft and hard TQM practices have relation with key business result.
Abdallah (2013)	Manufacturing	Jordan	Findings clearly directed that three hard (information feedback, process management and continuous improvement) and four soft (top management leadership, training, customer focus and workforce management) TQM practices positively affect the TPM.
Tan (2013)	Family owned business.	Malaysia	Results states that TQM elements positively influence the outcomes of businesses.
Sisnuhadi (2014)	Manufacturing	Indonesia	It is found that higher levels of hard factor is influenced by soft factors and then affects the organizational learning.
Psomas, Vouzas et al. (2014)	Food	Greek	Soft TQM techniques significantly and directly influence the improvement, customer and employee satisfaction. There is also a significant and direct relationship between quality improvement, customer and employee satisfaction and outcomes of food organization. Soft TQM techniques mediate the relationship between hard TQM techniques and quality management advantages.
Zeng, Phan et al. (2015)	Manufacturing	8 countries	It is found that innovation is effected directly and indirectly (through quality performance) by hard TQM while soft TQM has an indirect effect on innovation through hard TQM. The partial mediation role is shown by quality performance between quality management and

			innovation.
Wu (2015)	Manufacturing	China	The findings showed chain effect starting from quality culture working as antecedent of infrastructure TQM and infrastructure support core TQM which leads towards positive effect on firm performance.
Dubey and Gunasekaran (2015)	Manufacturing	India	There is a positive and significant relationship between techniques of soft TQM (human resource, quality culture, relationship management and motivational leadership) and financial outcomes of cement manufacturing companies.
García-Bernal and Ramírez-Alesón (2015)	Manufacturing and services	Spain	There is significant and positive relationship between TQM and operational outcomes of firms that influence the other outcomes of firms like customer satisfaction, financial and stakeholder outcomes.
O'Neill, Sohal et al. (2016)	Manufacturing.	Australia	Techniques of quality management significantly and positively influence the financial outcomes of small manufacturing firms and the firms that adopted TQM techniques provide superior results than other firms who do not use these techniques.
Psomas and Jaca (2016)	Services	Spain	Two TQM techniques influence the customer satisfaction, operational outcome and quality of product or service and one TQM element influences the financial outcomes of Spanish services organizations.
Saleh and Sweis (2017)	Manufacturing.	Jordan	Soft TQM techniques more significantly influence to the operational outcomes of manufacturing organizations than

			hard TQM techniques.
R. Islam & ALNaseer (2013) J. Kull & G. Wacker (2009)	Contractor	Malaysia	Soft and hard TQM practices have positive relationship with organizational performance.
Mardani & M.Kazemilari 2012	Manufacturing	Malaysia	TQM practices are widely acceptable management practices in manufacturing sector. Researcher recommended investigating the national culture in future studies.
Rabiul Islam & Abdullah Al Naseer 2013	Municipalities	Malaysia	Soft and hard TQM practices support the cultural change in the municipalities in various organizational performances. The researcher also recommended exploring these in other developing countries and also in the cultural context.

2.6.1 Summary of Systematic Review

Among the reviewed 100 articles, it has been found that several studies had been conducted in the developed countries like USA (Azmi, 2011; Kaynak & Hartley, 2008; Zu et al., 2008), Australia (Baković & Lazibat, 2011; O'Neill et al., 2016), Germany (Matsui, 2002a; Sadikoglu & Zehir, 2010) and Italy Macinati (2008) but the voice of TQM association with performance in developing countries has been ignored. Moreover it has been strongly recommended by the quality researcher more studies must be conducted in the developing or under researched developing countries in the context of TQM practices and organizational performance (Flynn & Saladin, 2006; Shafiq, Lasrado, & Hafeez, 2017). Interestingly, there is an opportunity for the researcher to

investigate TQM practices and the organizational performance as little can be said about the robustness of prior findings in the context of Pakistan (Shafiq et al., 2017).

TQM practices implementations towards organizational performance had been ignored in service sector around the globe and especially in the developing countries like Pakistan, Indian, Bangladesh (Shafiq et al., 2017). In the past decades, a lot of work has been done by previous researchers about total quality management (TQM) in the manufacturing sector (Dubey & Gunasekaran, 2015; García-Bernal & Ramírez-Alesón, 2015; Mehta, Verma, & Seth, 2014; O'Neill et al., 2016; E. L. Psomas & Jaca, 2016; F. I. M. Saleh, Sweis, Abdelqader, Abdallah, & Arafeh, 2017; Sisnuhadi, 2014; Tan, 2013; Zeng et al., 2015). However, researchers predominantly ignore to pay attention to total quality management (TQM) towards service sector like health, education etc. (Mehta et al., 2014). Furthermore, it has been indicated by Talib (2013) that the extensive application of total quality management (TQM) to enhance organizational performance began in the manufacturing sector and letter spread towards service sector. At this juncture, there is a need for research on potential factors of TQM practices to enhance the performance in the service sector organization (public hospitals) of Pakistan.

Large body of previous studies, nevertheless, has ignored the Balance Scorecard (BSC) approach to measure organization performance in TQM context (Abdallah, 2013; Al-Khalili & Subari, 2013; Baird et al., 2011; Dubey & Gunasekaran, 2015; García-Bernal & Ramírez-Alesón, 2015; Macinati, 2008; O'Neill et al., 2016; E. L. Psomas & Jaca, 2016; F. I. M. Saleh et al., 2017; Sisnuhadi, 2014; Zeng et al., 2015). According to (R.

Kaplan & Norton, 1992) balance scorecard approach has tendency to measure, manage and control organizational performance financially and non-financially to get the desired objectives of the organizations. The current study endeavors to fill and bridge knowledge gap and used BSC approach for the implementations or improvements of TQM practices towards organizational performance.

National culture is based on values. In general the culture of the country has ability to influence and improve performance via QM practices. Society's shared values or national culture always influence organizational performance and help to implement or improve TQM's practices (Tata & Prasad, 2010). As per many aforementioned empirical findings of various past studies, the cultural aspect has huge impact on the implementation of TQM practices on organizational performance (Anwar & Jabnoun, 2006; Flynn & Saladin, 2006; Kull & Wacker, 2010). In spite of the critical importance of national culture in the context of TQM practices towards organizational performance, the investigations are still lacking in the literature by previous researchers (O'Neill et al., 2016; E. Psomas et al., 2014; E. L. Psomas & Jaca, 2016; F. I. M. Saleh et al., 2017).

It is quite evident from the above mentioned 114 studies that the researchers have ignored the factor of national culture in the context of TQM practices towards organizational performance (Abdallah, 2013; Al-Khalili & Subari, 2013; Baird et al., 2011; Dubey & Gunasekaran, 2015; García-Bernal & Ramírez-Alesón, 2015; Macinati, 2008; O'Neill et al., 2016; E. Psomas et al., 2014; E. L. Psomas & Jaca, 2016; F. I. M. Saleh et al., 2017; Sisnuhadi, 2014; Zeng et al., 2015). The study by (D. Lewis, Tsang, & Kull, 2009)

revealed that past researchers had not investigated the impact of culture in general and country or national culture in particular on the implementation of QM towards the performance. Last but not the least (ALNasser, Yusoff, & Islam, 2013; Mardani & Kazemilari, 2012) investigated the cultural aspects of TQM practices on organizational performance. They have also recommended furthering examining the national culture while investigating the TQM practices and the organizational performance. Consequently, the existing study attempts to narrow down this gap this literature gap and investigated the national culture as moderator.

Categorization of TQM practices into core TQM practices and infrastructural TQM practices can enhance the organizational performance. The core QM practices directly influence the implementation and improvement of quality towards the organizational performance. The infrastructural TQM practices construct environment for the support of the core TQM practices (Nirmala & Faisal, 2016). Fewer numbers of studies were conducted by researchers those conducted the research based on the TQM practices and further divided core TQM practices and infrastructural TQM practices (Albers Mohrman et al., 1995; Lakhal et al., 2006; S. J. Wu, 2015; Zu, 2009). The researcher has examined above mentioned 114 articles from various sectors regarding TQM practices on performance of the organizations and there is a dire need to investigate further the TQM practices (infrastructural TQM practices and core TQM practices). Additionally, it is ironic and paradoxical to note that within this extant literature, the current study has investigated TQMs practices (core TQM practices and infrastructural TQM practices) towards the organizational performance to narrow down the gap in the literature.

Regardless of that the organizational performance of public hospitals that was ignored by the several past researchers in the context of Pakistan.

Consequently, the resource based view (RBV) has been used in complex firms working environment to enhance the organizational performance. It has played a vital role to get competitive advantage by the integration of available resources to upsurge organizational outcomes. Many studies in the past literature had no theoretical linkage between the RBV theory and TQM practices and showed no synergy between them (Abdallah, 2013; Al-Khalili & Subari, 2013; ALNasser et al., 2013; Dubey & Gunasekaran, 2015; García-Bernal & Ramírez-Alesón, 2015; Giritli & Oraz, 2004; O'Neill et al., 2016; Okolie & Okoye, 2012; Phua & Rowlinson, 2003; E. Psomas et al., 2014; E. L. Psomas & Jaca, 2016; F. I. M. Saleh et al., 2017; Sisnuhadi, 2014; Sui Pheng & Yuquan, 2002; S. J. Wu, 2015; Zeng et al., 2015). To bridge that gap, RBV theory was used as an underpinning theory in the existing study. Accordingly, in light of the current study (leadership, human resource management, financial management and IT infrastructure) have covered the resources based on the social aspects. Likewise (continuous improvement, customer focus and satisfaction and process management) are notable aspects of technical resources of the RBV theory to achieve the desired organizational outcome. The study findings extended the previous literature on organizational performance particularly in the context of Pakistani public hospitals.

2.7 Resource-Based Theory

The resource based view (RBV) determines the organizational performance difference based on the available resources Peteraf (1993). RBV theory is based on two assumptions: First within same industry, organizations may vary in their resources. Second, these resources may not be mobilized perfectly across organizations (J. Barney, 1991; Goodenough & Levine). RBV theory explains how the organization should maintain the unique and sustainable position (Hoopes, Madsen, & Walker, 2003). As per Peteraf and Barney (2003), the theory focuses on efficiency-based difference instead of other like market power and strategic behavior.

The resource could be anything that explains the strength of the organization. Resources may be tangible and intangible for examples employee skills, ability and knowledge, brand name, technology, creative procedures and processes, capital and contracts (Wernerfelt, 1984). To compete and accomplishment of the organizational vision, mission, goals and objectives, these resource are the foremost factor (Makadok, 2001). Hence, the central idea in RBV is that the organization can compete with other organizations having similar products, resources, capabilities on the basis of current resources (Peteraf, 1993).

The firm's resource based view (RBV) has been rapidly growing research area since last few decades (Galbreath, 2005). In literature, (Wernerfelt, 1984) firstly introduced RBV in organizational settings, by recognizing the organizational success through usage of internal resources. The internal resources are either capabilities (intangible skills and

knowledge) or assets (Collis, 1994; Teece, Pisano, & Shuen, 1997). The anticipated position of the organization is to create a unique situation that will be difficult to compete by the rivals (Wernerfelt, 1984). These unique characteristics of the organizations can help to implement those strategies that will improve its efficiency and achieve the competitive advantages over the other organizations (J. B. Barney & Clark, 2007; Conner, 1991).

Numerous factors like human competencies, procedures and regulations, useful resources, internal organizational strategies prevent the firm from other competitors to achieve the same level (J. Barney, 1991; Russo & Fouts, 1997). For the survival and growth of the organization, the dynamic competitive advantage should be achieved. Thus, knowledge accumulation and the continuous organizational learning strategies can build dynamic competitive advantage (Teece et al., 1997; Wernerfelt, 1984). In essence, the aim of this study is to examine the influence of TQM practices (core and infrastructural) on organizational performance. Additionally, the mediating role of core TQM and moderating role of national culture. These variables of the study can enhance the organizational performance to attain the competitive advantage. Thus, RBV was incorporation as an underpinning theory to address the objectives of the study.

2.8 EFQM Model

The EFQM Model is viewed as a TQM synonymous by numerous scholars (Adams, McQueen, & Seawright, 1999; Forza & Filippini, 1998; Hendricks & Singhal, 1996). The EFQM Excellence Model is the most generally employed in Europe and can be

considered a comprehensive and integrative approach, in which key, administrative and operational control procedures are incorporated into the model (Araújo & Sampaio, 2014).

Since the mid-1990s, the EFQM Model has been utilized to shape organizations quality approach and identify ranges for development. The model is a broad, non-specific and non-order structure (EFQM, 2013) that is connected in three ways. To start with, it is utilized as a frame of reference for an organizations quality strategy. Second, the model can serve as a self-assessment instrument to distinguish the qualities and shortcomings of an organizations quality management. Lastly, organizations employed it to apply for the European Quality Awards. The EFQM Model comprises of five empowering agent criteria (organizational areas) and four outcome criteria (outcome areas), see Figure 2.2 (van Schoten, de Blok, Spreeuwenberg, Groenewegen, & Wagner, 2016). The organizational area is frequently alluded to as "enabler criteria," though the result zones or the outcome area represent the "result criteria" of an organization or in other words the performance of an organization.

Figure 2.2: EFQM Excellence Model

2.9 Research Framework

Based on the previous literature, several studies had been studied by the researcher. The following conceptual framework was developed on the basis of the resource based theory (RBV). Resource based theory was the underpinning theory in this study. How the organization gets a competitive advantage or sustainable position in the market is defined by resource based theory (Hoopes et al., 2003). The organizations are competing with other organizations on the basis of limited resources and capabilities. These other organizations have similarity in their products or services, capabilities and resources (J. Barney, 1991). According to (Oliver, 1997), resource based theory helps the organization to utilize the limited resources rationally and economically. Additionally, the TQM practices are considered as the main resource to get the competitive advantage (Reed, Lemak, & Mero, 2000). EFQM model was the supporting model in this study. The EFQM Model has been utilized to shape organizations quality approach and identify ranges for development. The model is a broad, non-specific and non-order structure. Numerous researchers recommended the EFQM Model is viewed as a TQM synonymous (Adams, McQueen, & Seawright, 1999; Forza & Filippini, 1998; Hendricks & Singhal, 1996).

Numerous previous studies on the implementation of TQM practices in general and core TQM (customer focus and satisfaction, continuous improvement, process management) and infrastructural TQM (leadership, financial management, information technology infrastructure and human resource management) in particular i.e. Chin et al. (2002), Kaynak (2003), Ho et al. (2001), Rahman and Bullock (2006), Feng et al. (2006),

Gadenne and Sharma (2009), Zu (2009), Garcia (2011), Abdullah & Tari (2012), Al-khalili & Subari, (2013), Abdallah (2013), Calvo-Mora Schmidt et al. (2013), Sisnuhadi (2014), Zeng et al. (2015), Prajogo and Sohal (2004), Fotopoulos & Psomas (2009) had been investigated in many sectors such as manufacturing sector and non-manufacturing sector, food sector, retail sector, construction sector, in small and medium enterprises (SMEs) and other certified sectors. Very few studies had been investigated by the researchers in which TQM practices (infrastructural TQM and core TQM) had been implemented in the service sector in general and hospital sector in particular. Hence the current study employed generally the investigation of the infrastructural TQM and the core TQM practices in the service sector and particularly in the hospital settings.

Based on the previous literature and the suggestions or recommendation by the researchers, many studies were conducted in the developed countries as compared to the developing countries. In addition, several researches Ho et al. (2001), Chin et al. (2002), Kaynak (2003), Prajogo and Sohal (2004), Rahman and Bullock (2006), Gadenne and Sharma(2009), Fotopoulos & Psomas, (2009), Garcia (2011), Abdullah & Tari (2012), Al-khalili & Subari (2013), Calvo-Mora Schmidt et al., 2013, Sisnuhadi (2014), Zeng et al. (2015) had investigated the impact of the core TQM practices on the organizational performance in the sector other than service sectors. The above studies had been done in the manufacturing and non-manufacturing sector, the food sector, retail sector, construction sector and small and medium enterprises (SMEs). Few studies have been conducted by the researchers in the service sector in general and in the hospital setting particular. To bridge this literature gap, the current study has employed in the service

sector in general and hospital settings, in particular, to implement the core TQM practices (customer focus and satisfaction, continuous improvement, process management) on the organizational performance (customer perspective, internal process perspective, learning and growth, and financial perspective).

In the conceptual framework, the researcher investigated the mediating role of core TQM (customer focus and satisfaction, continuous improvement, process management) and the moderating role of national culture (power distance, uncertainty avoidance) on the relationship of Infrastructural TQM on organizational performance and core TQM on organizational performance respectively in the public hospitals of Pakistan. Organizational performance (customer perspective, internal process perspective, learning and growth, and financial perspective) is the dependent variable in the study and infrastructural TQM is the independent variable (leadership, financial management, information technology infrastructure and human resource management). In the below Figure 2.3**,** the core TQM was mediating on the relationship of infrastructural TQM and the organizational performance. The full mediation with the indirect affect was incorporated into the study; this relationship (full mediation) had not been investigated in the earlier studies. The full mediation explained the better explanation of the relationship of infrastructural TQM on the organizational performance as compared with partial mediation (D. Ho et al., 2001). The moderating role of national culture (power distance, uncertainty avoidance) in the relationship of TQM and the organizational performance had strongly recommended by (Mardani & Kazemilari, 2012) in the TQM practices

context in general and TQM practices on organizational performance in particular (Alharbi, 2012)

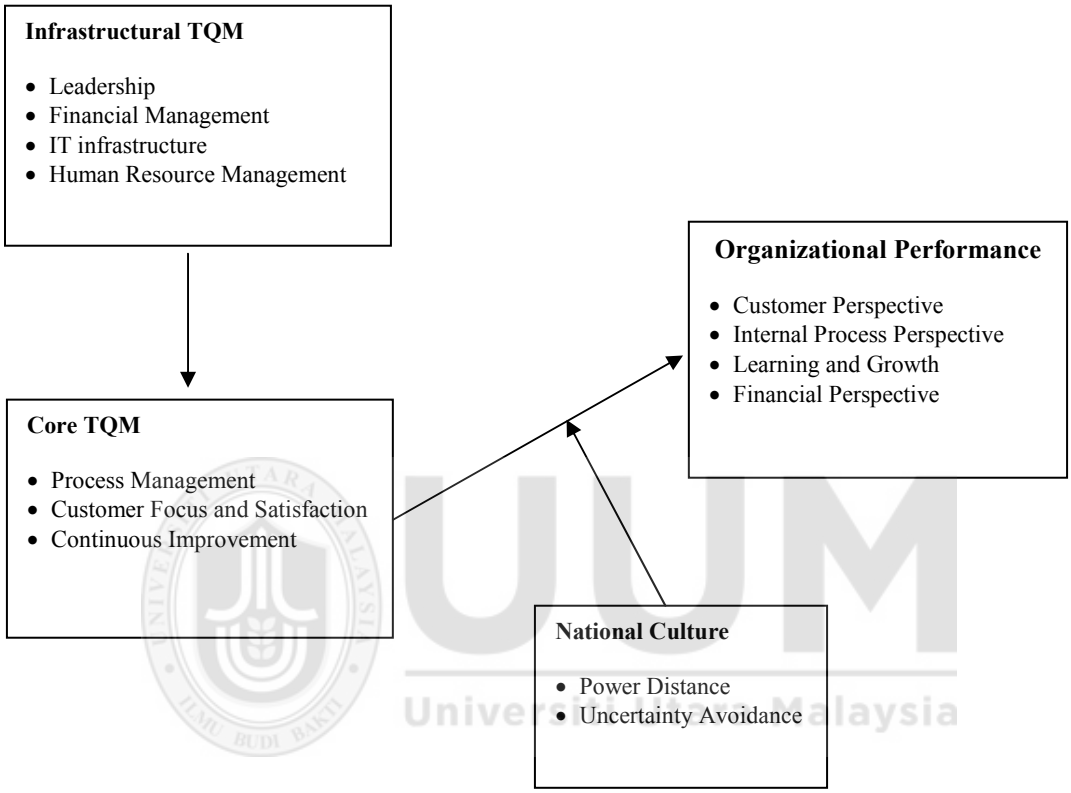

Figure 2.3: Theoretical Framework

2.10 Hypothesis development

The relationship between the infrastructure TQM and the core TQM towards the performance represents the first hypothesis of the current study. The core TQM practices consist of technical or methodological oriented TQM practices (process management, customer focus, and satisfaction and continuous improvement) and infrastructural TQM practices consist of people and cultural oriented TQM practices (leadership, financial management, information technology infrastructure and human resource management).

Additionally, the infrastructure TQM was measured by four dimensions (leadership, financial management, information technology infrastructure and human resource management).

Leadership is the most important enabler in the implementation of TQM practices in any organization. In the healthcare sector, the role of leadership is more important than any other sector (Fotopoulos & Psomas, 2010). Employees training and development, education, teamwork, reward, and recognition are the essential parts of human resource management. It can strictly be focused by various organizations to achieve objectives. In the health care settings, training and development of the employees play an imperative role to achieve the required targets. (Rahman & Bullock, 2005). Additionally, the financial management practices include market share, profit margins and return on investment also have an impact and highly considered by the organization. Especially, in the healthcare settings to get the desired output (Dubey & Gunasekaran, 2015; O'Neill, Sohal, & Teng, 2016). According to (Alharbi, 2012), financial resources are limited in the health care settings in general and in the public hospitals in particular. Hence the TQM practices should be implemented for achieving organizational performance with the usage of the available resources affectionately. The IT infrastructure practices were implemented in many organizations to keep the systems and the employees of the organizations up to date and to achieve the objectives of the organizations (Deming, 1986). The past researcher strongly recommended to investigating the IT infrastructure in the healthcare settings. In the TQM context, the role of the IT infrastructure is very vital (Alharbi, 2012).

The past literature indicated that mostly the researches were conducted in the developed countries. Therefore, the developing countries were ignored by the past researchers and researches were conducted on various other sectors than the service sector. Several studies indicated that infrastructure TQM practices had significant affect on core TQM practices Chin et al. (2002), Kaynak (2003), Ho et al. (2001), Rahman and Bullock (2006), Feng et al. (2006), Gadenne and Sharma (2009), Zu (2009), Garcia (2011), Abdullah & Tari (2012), Al-khalili & Subari, (2013), Abdallah (2013), Calvo-Mora Schmidt et al. (2013), Sisnuhadi (2014), in small and medium enterprises (SMEs) Zeng et al. (2015), in non-manufacturing sector Prajogo and Sohal (2004), in construction sector Gadenne and Sharma (2009), in food sector Fotopoulos & Psomas, (2009), in retail sector Garcia (2011) and other certified companies Fotopoulos & Psomas (2009). In the current study, the TQM practices (core TQM and Infrastructure TQM) were not investigated in service organizations context in general and the hospital settings in particular. In the previous literature, the above inconsistent findings of the aforementioned relationship of infrastructural TQM and the core TQM had been reported by various researchers. Additionally, most of the above studies had not been conducted in the developing countries and there is a lack of relevant literature in past studies. So, the first hypothesis is developed on the further scholarly call of the past literature as follow;

Hypothesis 1: Infrastructure TQM is positively related to Core TQM.

The association between the core TQM practices and the organizational performance represents the second hypothesis. Now a days, the implementation of the TQM practices within the organizations are developed from the quality control and quality assurance

(Maguad, 2006). Core TQM practices use tools and techniques to solve complex problems and predominantly control the processes and continuous improvement that leads towards the organizational performance. The performance can be measure as objective or subjective way. Financial related issues are the objective in nature as well as the personal related issues is objective in nature (Tavitiyamanet al., 2011). Empirically, the organizations have implemented the core TQM practices to enhance their abilities for providing the quality services to the end users (customers) leads towards its performance. Collection of the important data and disseminating the information within the organizations, employees management and instant problem solving leads towards taking immediate action are some key tasks perform under the umbrella of core TQM practices (Flynn, Schroeder, & Sakakibara, 1995; Handfield, Jayaram, & Ghosh, 1999; Kaynak, 2003).

Chen 2006 had investigated performance on multi-dimensional assessment system to improve the performance of the healthcare sector. In the current study, performance was also investigated multi-dimensionally (customer perspective, internal process perspective, learning and growth, and financial perspective) covered the both financial as well as the personal related objectives. The existing study investigated the core TQM practices multi-dimensionally (customer focus and satisfaction, continuous improvement, process management) for a better understanding of the concept. In the first dimension of customer focus and satisfaction, the organizations always put their customers first; design the product or services to meet the satisfaction level of the customers by understanding the needs and wants of the customers. In the healthcare sector and especially in the public

hospital's settings, the citizen's satisfaction is very essential part of any government policy (Terziovski, 2006). The TQM practices around the globe are incremental, not exhaustive so all the quality gurus of the research emphasized on continuous improvement to increase the productivity. In the healthcare settings and especially in the public hospitals due to the complexities in the various diseases, patterns of disease are changing rapidly, the technical staff, as well as the equipments, must be updated for the right diagnostics and proper treatment (Talib, Rahman, & Azam, 2011). According to (Sureshchandar, Rajendran, & Anantharaman, 2001), the process management is also very vital in the organization in general and the healthcare settings in particular. In the hospital settings, the tangible and intangible services are offering to the end users at the same time. It should be comprehensive to offer better services with error free environment.

Several researchers and studies were conducted in the developed countries and especially in the manufacturing, retail, food and construction sectors Ho et al. (2001), Chin et al. (2002), Kaynak (2003), Prajogo and Sohal (2004), Rahman and Bullock (2006), Gadenne and Sharma (2009), Fotopoulos & Psomas, (2009), Garcia (2011), Abdullah & Tari (2012), Al-khalili & Subari (2013), Calvo-Mora Schmidt et al. (2013), Sisnuhadi (2014), Zeng et al. (2015). There were very few studies in the literature on the service sector in the organizational settings of TQM practices. The current study was investigated in the developing country like Pakistan. The TQM practices were incorporated and their impact on the performance of the health care sector in general and in the hospital's settings in particular.

In Eastern Spain, ISO 9000 certified TQM practices in general and the tools and techniques, in particular, were significant correlated with the outcomes of these practices for the sake of customers or employees satisfaction and to achieve the desired results. According to (Yeung, Cheng, & Lai, 2005), he had classified core TQM practices into various modules (leadership, culture, operational systems and process control with improvement), the results revealed that the chain of modules of TQM practices had a significant effect on the performance as compared to parallel components. This chain of modules improved the customer satisfaction leads towards the performance of the organization. From the literature, these above are the inconclusive findings regarding the relationship between core TQM and the organizational performance. It is directed that more studies should be conducted in diverse settings to further investigate this relationship. Hence, the hypothesis is developed on the basis of further scholarly call as follows;

Hypothesis 2: Core TQM is positively related to organizational performance.

The association between the infrastructure TQM practices and organizational performance by the complete mediation of core TQM practices is representing the third hypothesis. Core TQM practices transmitted the influence of infrastructure TQM practices on the organizational performance (James & Brett, 1984). As per (D. Ho et al., 2001) the full or complete mediation among the infrastructural TQM practices and the performance will have better representation as compared to partial mediation. According to (James & Brett, 1984), the complete mediation model had better representation as compared to the partial mediation.

According to Hendrick 1997, both (infrastructure TQM and core TQM practices) should incorporate together rather than individual to effectively run the organization to get the desired results. Infrastructure TQM and core TQM practices play a significant role together for the successful implementation as well as the improvement towards the organizational performance (Flynn et al., 1995; Kaynak, 2003; Yeung et al. 2005).

Numerous researchers in the past studies such as (Ahire & O'shaughnessy, 1998; Rahman & Bullock, 2005; Sun, 2000a) had studied the direct link of the ITQM practices and the performance. At the same time, various researchers also studied the infrastructure TQM and the performance indirectly through complete mediation by incorporating core TQM practices between the infrastructure TQM and the performance (Ho et al., 2001). The indirect affect on performance from the infrastructure TQM with the mediating role of core TQM had not been investigated earlier. There was an empirical gap in the past literature in the healthcare organizational performance in general and hospitals in particular (Ho et al., 2001).

In the study conducted by Rahman & Bullock, 2005, he investigated that the role of core TQM practices mediating between the infrastructure TQM practices and the organizational performance. It had a significant indirect relationship between infrastructure TQM practices and the organizational performance. Calvo-Mora et al. 2013 also found that the infrastructure TQM practices have an indirect affect on the results (performance) of the organization and incorporation of core TQM practices between them have a positive impact. From the previous studies, it can be seen that the

incorporation of full mediation has better representation as compared to the partial mediation. Therefore, the incorporation of core TQM as a mediator in the study push forward the relationship of infrastructural TQM and the organizational performance as hypothesized in the following;

Hypothesis 3: Core TQM mediates the relationship between infrastructure TQM and organizational performance.

National culture consists of deep values and beliefs of the individual in the societies. The business culture of any organization is the sub-system of the national culture (Babatunde & Low, 2015). As per the definition of (Hoecklin, 1995) " National culture gives people their basic assumptions and values, that is, their ways of viewing the world". National culture is the fundamental element for the determination of the success and failure of TQM initiatives across the globe towards the organizational performance (Naceur Jabnoun & Abbas Al Khafaji, 2008).

According to the Hofstede's (1980, 1993) power distance, uncertainty avoidance, individualism vs. collectivism, masculinity vs. femininity and short term vs. long term orientations are the five national cultural dimensions. Numerous researchers recommended the Hofstede's model and considered it the most comprehensive model in cultural settings in general and national cultural settings in particular (Bhagat and McQuaid 1982, Low and Shi 2002, Phua and Rowlinson 2003, Van Ness et al. 2005, Magnusson et al., 2008, Tsai and Chi 2009, Fang 2010, Ahlstrom and Bruton 2010, Okolie and Okoye 2012).

Uncertainty avoidance is the most powerful dimension of the national culture. Uncertainty avoidance has an influence on the TQM practices or values (Stefan Lagrosen, 2003). As per the findings of (Mathews et al., 2001), uncertainty avoidance is the most useful dimension of the Hofstede' 1991 model. Uncertainty avoidance provided the better explanation of the observed variations (Mathews et al., 2001). (Mathews et al., 2001) recommended that power distance is one of the most useful dimensions of the Hofstede' 1991 model. Power distance provided the better explanation of the observed variations among various cultures (Mathews et al., 2001).

The past literature regarding TQM practices and the organizational performance had inconsistent results. Therefore to investigate this relationship further research was recommended by the previous researchers. Several researchers Chong & Rundun, 2004; Faisal et al., 2011; Hassan & Kerr, 2003; Miyagawa & Yoshida, 2010, Arumugam, Ooi, & Fong, 2008; Corredor & Goni, 2011; Hendricks & Singhal, 2001; Joiner, 2007; Kumar, Choisne, Grosbois, & Kumar, 2009; Miyagawa & Yoshida, 2010; Yeung & Chan, 1998. Barh, Tee, & Rao, 2002; Demirbag et al, 2006; Gadenne & Sharma, 2009; Hendricks & Singhal, 1997; Lee, 2004 had found the significant and positive relationship among the relationship. Few numbers of researchers had also found a significant and negative relationship between these relationships (Dooyoung, Kalinowski, & El-Enein, 1998). On the other hand several researchers have adverse findings as per the above researchers (Abebe, 2014; Dada & Watson, 2013; Jogaratnam & Tse, 2006; Lumpkin & Dess, 1996; Zhang & Zhang, 2012, Dooyoung, Kalinowski, & El-Enein, 1998; Hendricks & Singhal,

1996; Kannan & Tan, 2005; Kober, Subraamanniam, & Watson, 2012; Prajogo & Sohal, 2004; Yang, Wong, Lai, & Ntoko).

Furthermore, (Mardani & Kazemilari, 2012) indicated that to study the national culture in the TQM practices context. In another past research of (Alharbi, 2012), he also recommended the moderated effect of national culture in the context of TQM practices. Therefore, the current study has overcome the literature gap of national culture in the TQM context and national culture was incorporated as moderator. This study investigates the moderating effect of national culture in terms of power distance and uncertainty avoidance on the relationship between core TQM and organization performance. In this study, only power distance and uncertainty avoidance were chosen as the dimensions of national culture for this study. According to Hofstede, Pakistan has a high score for uncertainty avoidance and power distance as compared to other dimensions such as individualism, masculinity, and long-term orientation. The weak relationship between core TQM and the organizational performance. In the previous literature, the above inconsistent findings and drastic lack of related literature. Researchers have given calls to further investigate this prior relationship by incorporating moderator and especially in the developing countries context like Pakistan (Abusa & Gibson, 2013). For the fulfillment of the purpose the followings hypothesis are placed to be examined:

Hypothesis 4: Uncertainty avoidance moderates the relationship between core TQM and organizational performance.

Hypothesis 5: Power distance moderates the relationship between Core TQM and organizational performance.

2.11 Organizational Performance

In general, the success of the organizational performance can be examined by both subjectively and objectively. Objectively, hard financial issues are measured and on the other hand assessments of the personal issues are related to subjectivity. Performance measures can be assessed either by actual performance or with those activities that are helping to generate the performance (Tavitiyaman, Qu, & Zhang, 2011). Chen, Yang, and Shiau (2006) examined about the adoption of multi-dimensional performance assessment system to help the healthcare sector in general and hospital in particular to evaluate and improve the performance and obtain the required objectives of the healthcare organization. Business dynamics (decision making and information flow), performance measurement, employee performance measurement, customer satisfaction measurement, financial measurement and innovative activity measurement are the six measurement factors that can explain the performance measurement practices (Haktanir & Harris, 2005).

Innumerable performance measurement system has been adopted by various professional and organizations at various sectors to evaluate and improve the organizational performance. Kamil, Rahman, and Bakar (2011) examined the organizational performance in the context of higher education sector to evaluate the performance and then to make actions to improve the organizational performance. Mohammed, Sayed, Moselhy, and Abdelnaiem (2013) investigated the organizational performance between the customer relationship management (knowledge management, customer orientation,

CRM organization and technology based CRM) and various aspects of the organizational performance (financial, leaning and growth and internal process).

According to N. Kumar et al. (2014) investigated the performance indicators for health care system and their interrelationships. Healthcare sector is the fast growing but the complex and challenging sector and it is difficult to measure. In reality, to evaluate the performance of this sector is quite different and challenging especially in the hospital administrations. In hospital administration settings the existing practices, values, beliefs, assumptions and understanding about the evaluation of the performance are not capable to develop a systematic system that can help to identify the shortfalls and improve the various factors that can also evaluate and improve the performance. Now a days, healthcare are influenced by economic as well as the social conditions such as the reduction in cost (financial) and improve quality care via TQM, follow the stringent guidelines (non-financial) has helped the healthcare professional first to evaluate and secondly to make appropriate changes to increase the healthcare performance.

2.12 Hospital performance and Balance Scorecard

Kaplan and Norton 1992, proposed a concept of Balanced Scorecard (BSC) to enable the organizations to execute more comprehensive strategy to manage and control the organization performance that can help organizations to get their desired objectives. Customer perspective, internal process perspective, learning and growth innovation perspective and financial perspective are the four (4) perspective of balanced scorecard (BSC) approach to measure the performance.

2.12.1 Customer perspective

In customer perspective, the manager or decision makers of the organizations can convert their organizational mission statement according to the market segment on external customers so that they reflects those factors that can directly affect the customers. Organizational objectives and organizational strategies are the core part of this and it includes the indicators such as satisfying customer needs, intention to purchase and retention of the customers and market share to measure customer perspective (Luo et al., 2012). Patient satisfaction and outpatient waiting times in the below Fig – are parameters to measure the customer perspective (Yeung, Cheng, & Kee-hung, 2006).

2.12.2 Internal process perspective

In internal process perspective settings, the organization focuses on critical internal processes to implement organizational strategies. According to the Kaplan and Norton 1992, operations and post-service sale processes are some general internal processes that can help to develop appropriate performance measures to get the desired results through performance relating to time, quality and cost. Additionally in the study of Luo et al. (2012), operational efficiency, ability to retain the customer and reduced customer complaints are some indicators to measure the internal process perspective. Staff satisfaction, staff turnover, length of stay, occupancy, outpatient per year per doctor, emergency patient per year per doctor, admitted patients per year per doctor, mortality, medical accidents leading to law and suits rate are some measurement indicators to measure internal process perspective in the hospital healthcare settings (Yeung et al., 2006).

2.12.3 Learning and growth innovative perspective

In learning and growth innovation perspective, those measures for the continuous improvement directly related to the processes and the products lead towards the creation of the long term growth. According to the R. S. Kaplan and Norton (2001) the organizations can achieve their goals, objectives and the set targets by launching new services or products, continuous improvement in these services and products and also value addition of these services and products.

Additionally in the study of Luo et al. (2012), indicators such as continuous improvement in service quality, employee's ability to solve problems, employee's intention to learn and adopt new things can help to measure the learning and growth innovation perspective in various service sectors. Expenditures on medical research, Academic papers written in English per year per medical staff member and outpatient activity are some indicators to measure learning and growth innovative perspective in the hospital healthcare settings (Yeung et al., 2006).

2.12.4 Financial perspective

In the financial perspective, the measurement indicators are based on the financial metrics such as outstanding income, return on investment (ROI). According to Luo et al. (2012), in the service sector organizations, the increase in the sales, reduction in the total cost of the organization, increased profit margins are some financial measurement indicators. Additionally in the study of R. S. Kaplan and Norton (2001) the organizations can achieve their goals, objectives and the set targets through the proper and efficiently

measurement of the financials perspectives including the evaluation and the immediate actions to control the financials. Total profit margin, asset turnover, change of cost per case, personal expenditures as a percentage of total patient revenue, material cost as a percentage of total patient revenue are some indicators to measure perspective in the hospital healthcare settings (Yeung et al., 2006). According to the R. S. Kaplan and Norton (2001), in the organizational settings in general and healthcare organizational settings in particular the incorporation of the non-financial performance measures indicators in the balance scorecard (BSC) would be able to improve the financial measures. Furthermore, non-financial perspectives provide the feedback whether it impacts on performance into monetary terms in the financial perspective box. Therefore, the four perspectives of the balance scorecard (BSC) to measure the hospital performance are used in this study which provided the comprehensive image of the hospital performance.

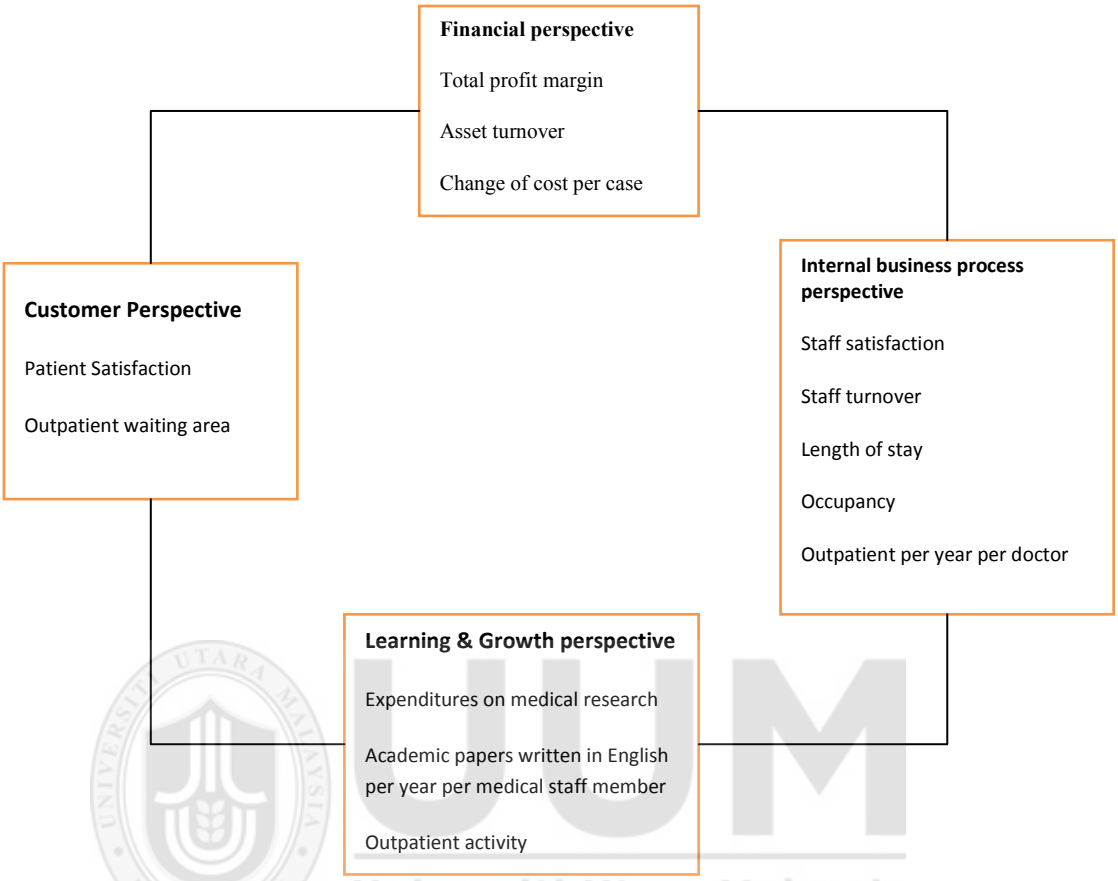

Figure 2.4: Balance Scorecard

Consequently, the balance scorecard (BSC) approach have been used in various organization or industries such as service, manufacturing and the non-profit organizations (R. S. Kaplan & Norton, 2001). Various management authors recognized balance scorecard (BSC) unprecedented in the measurement of the performance, balance scorecard (BSC) have ability to change the mission and strategy of the organization in the measureable objectives and these objectives are observed through four perspectives (learning and

growth, internal process, customer, and financial perspectives). In the short term and the long term objective measurement, the balance scorecard (BSC) can provides the balance for the healthcare organizations. Consistent with this argument, S.-H. Wu, Lin, and Hsu (2007) conceded that in the service sector the financial Figures are not enough to understand the performance of the organizations.

2.13 Infrastructural TQM

Infrastructural TQM is considered as the people perspective and management issues TQM in which quality is generated in the people associated with the company. Different researchers take different practices for soft side of the TQM according to situations but some practices are common which are used by most of the researchers to measure soft TQM and measure its effect on performance of the organizations. These practices include leadership, human resource management, financial management and information and communication technology.

To gain competitive advantage Chin et al. (2002) identify the TQM factors and sub factors to adopt and implement TQM practices in state-owned and foreign joint ventures manufacturing firms working in China specially Shanghai manufacturing companies. Analytic hierarch process (AHP) is used in thirteen manufacturing companies in China. The results advocate that soft TQM practices are the priorities of these companies by finding four factors and sixteen sub factors. The factors categorized in soft and hard TQM variables. Soft variables includes strategic planning, leadership, education and training, existing organizational culture, top management commitment, culture change,

employee involvement and human resource development while hard variable includes tools and techniques, quality system, process analysis and improvement, supplier chain management, internal performance measurement, external performance measurement, communication and recognition and reward.

2.13.1 Leadership

Leadership plays a pivotal role to improve performance in quality setting for the healthcare organizations from top to lower management to improve quality, to focus on process management roles and implementations to facilitate leadership (Fanelli, Lanza, & Zangrandi, 2017). In the sector of healthcare there are multiple stakeholders (patients, administrative staff and all the direct and indirect stakeholders) those present formidable challenges such as determine strategies, promotion of values and integration of all the processes (Hockey, Jimenez-Bescos, Maclean, & Spaul, 2010).

Leadership is an influence process between leaders and followers. The leader intends to influence the followers' behavior to reach the organizational goals. Leadership has been explained concerning personality, responsibility, position, and behavior (R. Sharma, 2010). Furthermore, for an organization to succeed in its goals achievement and objectives the burden is on the leaders in the organization and their leadership behavior (Noruzy, Dalfard, Azhdari, Nazari-Shirkouhi, & Rezazadeh, 2013)

According to Grady (2016) leadership in the form physician can help to transform the healthcare settings and improvement of the patient outcome and development in the

performance of healthcare sector. “System thinking” approach should be used for effective health care practices implementations such as Patient-care leadership, Physicians as leaders, leadership in complex systems (capitalization of collection intelligence and influential outcomes) .In the healthcare organization settings leadership provides a different approach and improved way of leading the organizations and this way of leadership thinking can also develop structural and operational behaviors within the heath care organizations (Weberg, 2012).

Transformation from enabler criteria (referred to the organization adopted strategies or practices) to result criteria (referred to organization performance), the role of leadership especially in the health care organization settings is very important to get the desired results in the form of healthcare organizational performance or outcomes (van Schoten et al., 2016). In healthcare organizational settings, (Prabhu & Robson, 2000) demonstrated the development of skills through training and development for employees, strategies patient related issues solution and operational outcome measures can definitely improve the healthcare organizational performances.

In other words, the leadership must introduce activities to stimulate employees, and establish the roles for an individual or group towards goal achievement. Leadership has been portrayed as a process of social impact in which an individual can help and support others in the achievement of a typical task. For instance, a leader is a person that other persons need to follow, or as someone who controls or administers others. Apart from

that, leadership can also characterize of managing and helping individual or a group of people to achieve the objective successfully (Northouse, 2015).

Leadership style is related to a leader is behavior in giving guidance, actualizing plans, and motivating his or her employees. As seen by the employees, it incorporates the aggregate example of explicit and implicit actions performed by leader. Nowadays, there are lots of challenges faced by leaders in maintaining talented employees in organizations. Whether a leader can motivate, inspire and create commitment to common goals is important (Asrar-ul-Haq & Kuchinke, 2016).

2.13.2 Human Resource Management

Human resource is viewed as a system is defined as "a set of distinct but interrelated activities, functions, and processes that are directed at attracting, developing, and maintaining (or disposing of) a firm's human resources"(Lado & Wilson, 1994). To gain competitive advantage through human resource organizations employed suitable human resource management practices. Human resource management practices are identified as an instrument that carries out fundamental role in attaining organization's goals besides sustaining the competitive advantage in the marketplace (Barrows, Rogoff, & Robinson, 2017).

Human resource management practices are the activities of managing the human capital in the organization which is directly connected to the managerial functions such as planning for recruitment and selection, rewards, developing, utilizing and maximizing the

capabilities and potential of employees in the organization. Human resource management practices are a set of planned practices implemented by an organization to lead and manage human capital to achieve the organizational performance in term of productivity, quality and effectiveness (Delery & Gupta, 2016). Furthermore, Albrecht, Bakker, Gruman, Macey, and Saks (2015) stated that the best use of human resource management practices leads organizations towards competitive advantage.

The integration of human resource management and total quality management are vital or any organization success (Daoud Abu-Doleh, 2012). Substantial amount of research has been conducted in determining how human resource management effect on the implementation of total quality management in an organization to gain competitive advantage (Daoud Abu-Doleh, 2012; Deepika, Anandakumar, & Krishnamoorthy, 2016; Habtoor, 2016; Izvercian et al., 2014; Jiménez-Jiménez & Martínez-Costa, 2009; Nirmala & Faisal, 2016; Yang, 2006; Yazdani, Attafar, Shahin, & Kheradmandnia, 2016). The potential impact of HRM practices on total quality management must be further investigated in different service and manufacturing industries in order to get more information on the association of human resource management and total quality management (Daoud Abu-Doleh, 2012). In spite of the growing prominence of the association of human resource management and total quality management in TQM literature as discussed above, this aspect of the investigation is still lacking in the TQM (health care) literature as shown in Table 2.3. Therefore, this study is an attempt to bridge this gap in the literature by study human resource management practices in term of (recruitment and selection) and (training and development).

The process of recruiting and selecting staff has an essential role in the workforce planning process because it is a difficult task to perform due to its major influence on organizational performance. An organization depends on the right number of workers, the proper skills required and the motivation for workers to foster positive behavior to increase the organization's performance (Dessler, 2013). The concept of recruitment and selection is to ensure that the people and their skills, abilities and capabilities match the work. It has been noted that with an effective staffing process, organizations should be able to adapt to the business environmental changes more effectively (Mathis, Jackson, Valentine, & Meglich, 2016). Training and development is part of an organization's investment because it is believed to bring higher returns to the organization in terms of knowledge, skills and quality (Dessler, 2013). Training and development can be categorized as formal and informal. Informal training focuses on self-reflectivity, theories and concepts in action; while formal training focuses on work-based learning and workplace development; such as mentoring, coaching, job rotation, job shadowing, projects and assignments (Mathis et al., 2016).

Human resource management practices like recruitment and selection or training and development is considered because these both practices have the greatest significant impact on the implementation of total quality management in service industry as compare to other human resource management practices like human resource planning, work design and analysis, performance appraisal, incentive compensations, employee career development and employee relations (Daoud Abu-Doleh, 2012).

2.13.3 Financial Management

Brigham and Houston (2012) stated that financial resources are important organizational resources. No organization has ever succeeded without financial resources. To mitigate financial risks and enhance financial performance of the organizations it becomes imperative for organizations to consider financial management (Titman, 2015). Financially well managed organizations are operationally efficient. Researchers suggested that optimal commitment and application of financial management practices leads organizations towards better performance (Butt, Hunjra, & Rehman, 2010; Hunjra, Bilal, Shafi, Khokhar, & Rehman, 2011; Hunjra, Butt, & Rehman, 2010; Hunjra, Iqbal, Shaheen, & Niazi, 2012; Maingi, 2014; Nkundabanyanga et al., 2017). According to (Nkundabanyanga et al., 2017) organizations can gain competitive advantages through best use of financial management practices.

Financial management is concerned with organization's decisions on how to source for funds, how to control financial resources through financial controls, prudent allocation of financial resources and accountability measures. The rationale for financial management is raising funds for both short-term and long-term use and enhancing proper utilization of the funds. According to (Gitman & Zutter, 2015), financial management means

"Financial management as the area of business management, devoted to a judicious use of capital and a careful selection of sources of capital, in order to enable an organization to move in the direction of reaching its goals"

Different scholars reveal different management practices such as (Hunjra, Niazi, Akbar, & Rehman, 2011) identify financial management practices as working capital management, management account, risk management, capital budgeting, financial analysis, financial planning, working capital management and accounting information. Nkundabanyanga et al. (2017) Indicate working capital management, budgeting and risk management as financial management practices. Moreover, (Hunjra et al., 2010) proposed financial performance assessment, capital structure decision, investment appraisal techniques, working capital management and dividend policy as financial management practices. Large body of previous studies design financial management practices mainly for profit oriented organizations and they overlook financial management practices for nonprofit government organizations like public hospitals or public schools as shown in Table 2.1 (e.g. Gul et al., 2013; Hunjra, Bilal, et al., 2011; Hunjra et al., 2010; Hunjra, Niazi, et al., 2011; Nkundabanyanga et al., 2017; Raheman, Afza, Qayyum, & Bodla, 2010; Tauringana & Adjapong Afrifa, 2013; Tufail & Khan, 2013; Zariyawati, Annuar, Taufiq, & Rahim, 2009).

Today health organizations like public hospitals face many quality issues and these issues are challengeable for health related organizations because they are frequently emerged (Al-Shdaifat, 2015; Alzahrani, Alzahrani, & Alfarraj, 2016). These issues can be overcome by implement TQM practices that is dependent on how well finances are managed (Dam, 2011). Financial management is concerned with organization's decisions on how to source for funds, how to control financial resources through financial controls, prudent allocation of financial resources and accountability measures. According to

Economic Survey of Pakistan (2015-16), Pakistan government allocate only 0.45% budget to the health sector.

Aforesaid facts indicate that due to low budget allocation, public sector hospitals have low financial resources. To implementation TQM practices within limited financial resources required better and optimal utilization of financial management practices. For nonprofit public organizations (public hospitals), financial management practices like budget management and financial control are beneficial (Munge, Kimani, & Ngugi, 2016). Very little research has been specifically concerned with demonstrating the financial management practices for nonprofit public organizations. Furthermore, to the authors' knowledge, none of previous studies have proposed financial management practices for nonprofit public organizations (hospitals).

Financial management practices in nonprofit public organizations is warranted to ensure funds are available when needed and that they are obtained and used in the most efficient and effective way to the benefit of the citizens. Managing the movement of funds in relation to the budget is essential for some nonprofit public organizations like hospitals. But experience reveals that the financial management processes of non-profit public organizations are generally weak and dominated by conditions of resource scarcity vis- à-vis the ever increasing agenda of development activities on which such funds could be spent (Golda, 2013). Hence, this study employed financial management practices (budget management / financial controls) for non-profit public organizations to implement TQM practices within limited financial resources.

2.13.4 Information Technology Infrastructure

The global business competition has revealed the needs of information technology in securing business competitiveness (Dunning, 2013). Nowadays, the word information technology is frequently applied by most of the companies and even individual in the world. Therefore, the information technology is playing an important role at the moment and future as well (Davenport, 2013). The main function of information technology is to store, retrieve, manipulate, and send information and transmit information, especially the development, installation, implementation, and management of the information for conducting business through the integration of telecommunications equipment and computer application (Watson & Hill, 2015). In general, information technology can be defined as

"A set of tools, processes, methods, and related equipment such as office automation and multimedia used to collect, store, transmit, manipulate, process, and present information"

Information technology utilization is widely recognized as a foundation of success in TQM and an essential approach to implement TQM practices (Khanam, Siddiqui, & Talib, 2014, 2015a, 2015b, 2016a; Khanam & Talib, 2016). Researchers stated that information technology capabilities drive differences in firm performance by strengthens information technology assets and broadens their impact (Aral & Weill, 2007). The used of information technology able to improved flexibility and optimized overall performance (Dozier & Chang; Fantazy, Kumar, Kumar, & Mishra, 2009). However, a higher level of

information technology capability does not promise a higher level of information sharing and information quality.

At present in organizations TQM practices has been implemented by using information technology (Khanam, Talib, & Siddiqui, 2015). Now a days, health organizations face many challenges in term of rising cost of health services, complexities in diseases and diagnostics, established international standards and rapidly growing technology dependence (Al-Shdaifat, 2015). The adoption of information technology and TQM together have potentialities to cope up all challenges that are faced by health organizations (Al-Shdaifat, 2015; Khanam et al., 2016a; Torre, 2016). Effective execution of TQM and IT together is an important and significant resource to accomplish the business vision (Khanam et al., 2016a).

Several researcher indicated that IT resources significant influence on several TQM practices (Barata & Cunha, 2015; Dewhurst, Rafael Martínez-Lorente, & Sánchez-Rodríguez, 2003; Khanam, Siddiqui, & Talib, 2016b; Martinez-Lorente, Dewhurst, & Gallego-Rodriguez, 2000; Martínez-Lorente, Sánchez-Rodríguez, & Dewhurst, 2004; Sadeh, Arumugam, & Malarvizhi, 2013; Sánchez-Rodríguez & Rafael Martínez-Lorente, 2011; Torre, 2016). However, many organizations fail to adopt TQM and IT together (Khanam et al., 2016a). Moreover, several attempts has been made for the execution of TQM and IT in information communication and technology (ICT) industry as shown in Table 2.2 (Berndt Göran Svensson, Siu Mane David Lai Wai, Keshwar Seebaluck, & Teeroovengadum, 2011; Holub & Tomiska, 2009; Khanam et al., 2016a; Mojarab &

Ghahremani, 2016; Siam, Alkhateeb, & Al-Waqqad, 2012; Tiwari & Chaudhari, 2012; Valmohammadi, 2011; Warfield, 2010). Hence a deeper assessment of TQM and IT in the public health sector is warranted.

Information technology play a vital and influential role than ever before in hospitals (Baysari et al., 2016). Information technology in hospitals has the potential to improve patient care, reduce medical errors and lower costs (Reddy, Purao, & Kelly, 2008). The RBV of IT recommends that the IT resources in the organizations can be the competitive capability of the organization. Bharadwaj (2000) points out that organization human IT skills, IT infrastructure, and IT configurability are organizational inimitable resources. Every single IT resource is unique and complex to acquire. The relationship between IT capability and organization performance is becoming more complex than ever before (Jeffers, Muhanna, & Nault, 2008). Bharadwaj (2000) Points out that various IT capabilities could be sources of competitive advantage. However, a limited number of studies have explored the RBV of IT capability, and most of the analyses to data were conceptual nature.

A synthesis of the available literature (Broadbent & Weill, 1997; Broadbent, Weill, & St. Clair, 1999; Ismail & Mamat, 2012; Khaidir, Habidin, Jamaludin, Shazali, & Ali, 2014; Ravichandran & Lertwongsatien, 2005; Terry Anthony Byrd, 2000) suggests that this study used information technology (IT) infrastructure dimension of information technology. Broadbent et al. (1999) defined IT infrastructure as the combinations of technological and human components. Technological infrastructure is referring to the

hardware, software, communications technologies, and data application, while human component is referring to the commitments, expertise, skills, norms, competencies, values, and knowledge of the employee. Hence, it is complex and difficult to imitate. Terry Anthony Byrd (2000) further defined the IT infrastructure as all the technology components, applications, software, and all physical components that are used to improve operations, process, and create various capabilities within the organization. While, Bharadwaj (2000) defined IT infrastructure as firm's communication technologies, computer, and the shareable technical platforms and databases. It provides a foundation for communications interchange across and within organization to develop and implement present and future business applications (Broadbent et al., 1999).

Organizational IT infrastructure has been defined as a key of business resource and competitive weapon for survived in competitive marketplace. The successful organizations exploit their infrastructure capabilities to redesign their products and services (Bharadwaj, 2000). Therefore, the selection of firm's IT infrastructure is increasingly accepted as one of the critical steps for firm to become competitive. It is particularly important for organizations to made dynamic change on business processes and extensive international business operations (Broadbent et al., 1999). The well manage of IT infrastructure enables firms to reduced production time, improved communication among employees, improve production cost, improve interconnectivity, and best support demand-side initiatives. Researchers and practitioners alike noted that the potential value of an organization's IT infrastructure has significantly impact on organization performance directly (Tallon & Pinsonneault, 2011).

2.14 Core TQM practices

Core TQM is considered as tools and techniques used by the organizations for the achievement of the quality that supports and help the people for implementing the TQM. These are the practices which can be seen or measure easily and related to product design, process design, continues improvement, customer focus, customer satisfaction and quality improvement. Like infrastructural TQM practices, several researchers take different practices as hard TQM but some of the practices are similar in most of the studies. Following are the practices for core TQM.

2.14.1 Process management

Numerous process (peer reviewed processes) methods are identified by various researchers in the healthcare settings such as to identify and fix ICU deficiencies (Stow et al., 2006), prognostic model (Becker and Zimmerman, 1996) physiological scoring systems in various healthcare organization (Moreno et al., 2005; Zimmerman et al., 2006) and for the "goodness-of-fit" application of stricter statistical criteria (Sherck and Shatney, 1996) be able to predict the organizational performance, to get quality in the processes of the organizations, mistakes free process should be developed along with the clarity process responsibilities and ownerships, boundaries and steps. Use the statistical techniques to design the fluent process which help to improve the quality in firm (Ho, D.C.K., Duffy, V.G. and Shih, 1999; Zu, 2009).

According to Hariharan, 2008, TQM practices can enhance managerial performance through the efficient organizational processes and with efficient staff to cope various

management issues. Firstly the availability of the services is essential and secondly proper processes to avail these services must be clearly mentioned for the general public (patients) in every healthcare organization. Implementation of various tools, techniques and strategies for these processes within the healthcare organizations to easily understand and use the services to get the desired outcome for the organization in generally and patients in specifically. In total quality setting organizational outcomes included the both dimensions of the care provided and processes by which the care is carried out.

According to Mohammad al Ali, 2014, due to new governmental regulations, pressure from the general public or patients and to implement the hospital processes management have already change the healthcare market from a producer oriented to customer oriented market. Both the healthcare organizations and the customer need easy and clear process to offer and avail the services accordingly. Patients become customers now for the healthcare organizations, the TQM systems can helped the organizations to solve critical issues, provide better healthcare services processes, processes to get customer focus with error free environment to get the competitive advantages over the competitors in the market. TQM settings in the healthcare organizations helps for process simplifications that helps for better management and lower the cost indeed.

Numerous researchers in the past literature showed the importance of implementation of TQM in processes of the organizations that leads change towards the performance. According to (Ovretveit, 2000) “Comprehensive strategy of organizational and attitude change for enabling personnel to learn and use quality methods, in order to reduce costs

and meet the requirements of patients and other customers. (William & Johnson, 2013) emphasized that TQM is a management method:

"TQM/CQI – Continuous Quality Improvement – is simultaneously two things: a management philosophy and a management method". Indeed the "the maximization of patient's satisfaction considering all profits and losses to be faced in a healthcare procedure" (Donabedian, 1989).

Total quality management plays more important role than the change in the processes and requires rigorous flow to design and implement the processes for the activities that are performed on daily basis within the organizations (McLaughlim&Kaluzny, 1990). Employee management, customer management, information management and process management under the umbrella of TQM settings have positive impact on the healthcare organizational performance. Process management including business process reengineering, six sigma and quality functions deployment have significant and positive effect on the organizational performance in the healthcare organization both the public as well as private (Mosadeghrad, 2014).

2.14.2 Customer focus and satisfaction

Now a day, the healthcare organizations deploy total quality management tools and techniques to increase patient satisfaction and focus more on the patient-oriented environment (Lurie et al., 2002). Many studies in the past literature showed that more the focus on the customers in general and patient in particular with the positive

implementation of TQM practices can enhance the organizational performance organizations in the healthcare organizational settings (Alexander, Weiner, & Griffith, 2006; Chesteen, Helgheim, Randall, & Wardell, 2005; T. J. Douglas & Judge Jr, 2001). Customer focus attitude by the healthcare organizations and building long term relationship with the customers and make them satisfied are the primary responsibility of any organizations (L. Douglas & Connor, 2003; Mohr & Bitner, 1995).

According to Song et al. (2016) in the healthcare organization particularly in the public and private hospitals the internal customers (employees) and the external customers (patients) both have same impact on the performance of the healthcare organizations. TQM practices provide ease to the healthcare organizations to plan, implement and to put control on these practices with proper up-gradation. Employees in the organizations help and improve the service quality, this improved service quality helps to build relationship with the customers and long term relationship with the customers always make them satisfied customers. Satisfied customers always add values and these also encourage the internal customers (employees) to better deliver the services as they get positive feedback from the customers.

Additionally the TQM practices implementations also help the organizational employees to have positive attitude towards the work environment as they are directly participating. TQM practices are the holistic and integrated activities to improve service quality leads towards the customer satisfaction (Chen et al., 2006; Elobeid et al., 2013; Hyder et al., 2003; Sila, 2007; Talib, Rahman, & Azam, 2011). Subjects of many studies were

primarily patients, medical doctors, clinical leaders, or hospital executives (Duggirala, Rajendran, & Anantharaman, 2008; Fergusson, 2008; Hassan et al., 2012; B. Lin, 1995; Øvretveit, 1996; Short, 1995).

2.14.3 Continuous improvement

Several areas in healthcare sector in generally and especially in the hospital settings have already applied Continuous Improvement (CQI) in every department especially the emergency department (Fernandes & Christenson, 1995; Fernandes, Christenson, & Price, 1996; Re & Krousel-Wood, 1990). In the total quality management (TQM), the quality has fundamental role for continuous improvement through employee involvement and measurement metric in the healthcare organizations. No need for deep understanding or knowledge for the industry for the implementation of TQM practices (Mohammad Mosadeghrad, 2014). Countless healthcare organizations utilized TQM practices such as quality assurance and continuous quality improvement in the healthcare organizations that have very strong positive impact on the performance (outcomes) of the organizations and also improve the services for the patients (Mohammad Mosadeghrad, 2014).

According to (Salaheldin et al., 2015), now a days the healthcare organizations around the globe have taken serious step to implement TQM practices and equally emphasis on the continuous improvement to get the best outcome for the organizations. To upgrade quality services, improve health care quality leads towards organizational performance are vital factors for the continuous improvement for all the healthcare organizations in the existing competitive marketplace. In this era of competitiveness, the organization gets

more customer (patients) satisfaction, less the operational cost, employee satisfaction and especially the patient and employees safety just by focusing on the TQM practices with the continuous improvement. In the hospital the constant improvement on all the levels such as building trust among the internal and external customers by providing the best upgraded services, work collaboration through conducting continuous improvement and increase the performance of the healthcare organizations.

2.15 Culture

Culture is an entity having objectives of behavioral and cognitive uniqueness (Schein 2004). Nakata Sivakumar 2001 defined cultures "culture has been defined as a system of thinking, feelings and performance that have been anchored in a group of people believes and values". According to Goodenough 1971, the definition of culture is momentous statement as;

"A society's culture consists of whatever it is one has to know or believes in order to operate in a manner acceptable to its members. Culture is not a material phenomenon; it does not consist of things, behavior or emotions".

Hofstede 1991 describes culture as differentiation of members of society to other societies based on the collective mindset of the people. Hofstede 1991 describes culture as differentiation of members of society to other societies based on the collective mindset of the people. In the service sector, cultural discrepancy has a significant impact on the end users (consumers) and service providers as the interaction between them is greater than any other tangible goods (Mattila, 1999). Pheng and Yuquan 2002 highlighted some

consequences to ignore and mishandling these differences can leads towards inability to motivate and retain the employees, lapse in marketing and advertising, misunderstanding in evaluating the cross-border alliances possibilities and failure to sustain the competitive advantage. Contradictory, if culture is managed successfully then the organizations can manage better learning, enhance management within or outside the organization and sustain the competitive advantage (Hoecklin, 1996).

Culture is too difficult phenomena to understand and various dimensions are grasped in the culture (Steenkamp, 2001). Different educational background, laws, attitudes and beliefs, customs, morals, economic and political framework are some dimensions of cross cultures (Evans et al 1996). Every country around the globe has its own culture and dimensions based on religion, languages, rules, customs, beliefs and heritage (Pagell et al. 2005). Thus, the assemble of cross-culture and the national culture are based on different disciplines (sociology, political science, economics, geography, proportional medicine, global market and psychology) (Hofestede 1991). Culture is defined by Hofestede (1991) as “collective programming takes place at the national and at the organizational level". Lagrosen (2003) acknowledged "companies cannot develop an organizational culture that differs substantially from the prevailing Cultural factors of the country in which it operates".

National culture and the organizational culture are different concepts that are mostly implemented by the organizations now a day. Organizational culture are those practices (values, beliefs) shared by the member of the organizations while in the national culture

the people compact beliefs, perceived values and the day by day practices are pertained by group of people represented a certain nation in the organizational settings (Van Oudenhoven, 2001). According to the Hofstede 2003, various studies regarding national culture provided different identification because the nations are the only available identity to study the culture. Schwartz (1994) and Trompenaars (1993) coincided with Hofstede 2003 and developed a proposed model to study culture with perspective of the national culture. Various management studies have studied the effect of culture from national perspective (Laroche et al., 2004; Lorenzoni and Lewis, 2004).

2.15.1 Dimensions of culture

Numerous scholars on the base of different dimensions have studied national culture differently (Hall & Hall, 1990; Hampden-Turner & Trompenaars, 1993; Schwartz, 1994). (House, Hanges, Javidan, Dorfman, & Gupta, 2004) found the most authoritative dimensions for cross cultural studies aspect. Hall and Hall (1990) studied the culture on the bases of high and low context communication among the countries. He contemplated that the people with high context inquire about the information from their personal information network. On the other hand, the people with low communication always seek information from reliable resources such as published research or existed studied. The decision making is also based on high and low context communication as in high context culture the decision is taken on the basis of information received from friends, relatives and families.

Hampden-Turner and Trompenaars (1993) has developed following five dimensions of national culture universalism vs. particularism, individualism vs. communitarianism, neutral vs. emotionalism, specific vs. diffuse, and Achievement vs. ascription. Schwartz (1994) on the basis of human values has proposed a framework based on two facts of theoretical reasoning and past experience respectively. Conservation, Affective Autonomy, Intellectual Autonomy, Hierarchy, Mastery, Harmony and Egalitarian Commitment are the seven cultural values. According to the House et al. (2004), nine cultural dimensions (power distance, uncertainty avoidance, institutional collectivism, in-group collectivism, gender, assertiveness, future orientation, performance orientation and human orientation) have developed based on the cultural practices and values.

Hofstede dimension

Hofstede's framework is most frequently used or citied between the relationship of national culture and working values (Bhagat & McQuaid, 1982) and further used in cross cultural management theories and practices (Fernandez, Perry, & Flore, 1997). According to Hofstede's, initially the cultural measurement is based on the employees satisfaction but later national attributes are also co-related to the culture. Hofstede's relied on the theoretical reasoning pursued by statistical factors to classified the cultural dimensions (Magnusson, Wilson, Zdravkovic, Xin Zhou, & Westjohn, 2008).

According to the IBM company survey, four key dimensions cultural values are used in the Hofstede's model. Hofstede's framework has mainly accepted model in cross cultural research (Van Ness et al. 2005) utmost influential work in cross cultural management (Jiang, Fang, Mao, & Wang, 2010) conceivably the largest organizational study ever

(Ahlstrom & Bruton, 2010) this model is considered the constituent for future theory deployment. Therefore, Hofstede's model applied in the construction based studies in Singapore (Sui Pheng & Yuquan, 2002) Hong Kong (Phua & Rowlinson, 2003), Nigeria (Okolie & Okoye, 2012), China (Liu, Steve Chi, Friedman, & Tsai, 2009) and Turkey (Giritli & Oraz, 2004).

According to the Hofstede (1980, 1991), five national cultural dimensions are considered namely power distance, uncertainty avoidance, individualism vs. collectivism, masculinity vs. femininity and short-term vs. long term orientation. (Shackleton & Ali, 1990) considered the most comprehensive national cultural dimensions. Following are the five dimensions in details;

2.15.2 Power distance

The point of inequality along with the less powerful people and they accepted that the power is dispersed unequally (Hofestede, 1991). High and low level of inequality represented the high power distance and low power distance accordingly.

2.15.3 Individualism versus Collectivism

According to Hofstede 1991, the definition is," Pertains to societies in which the ties between individuals are loose and the collectivism is opposite". In Individualism, the self-interest or the family interest are mainly considered. On the contrary, emphasis on the team work or whole society oriented interest is considered in collectivism.

2.15.4 Masculinity and femininity

"The dominant sex role pattern in the vast majority of both traditional and modern society" (Hofestede, 1991). Higher male dominancy and low male dominancy among the genders represents masculinity and femininity accordingly.

2.15.5 Uncertainty Avoidance

According to Hofstede 1991, the degree at which the members feel threatened among the cultural settings by unfamiliar situation. Acceptance of the ambiguity is low in high uncertainty; on the other hand in low uncertainty the acceptance of the ambiguity is high.

2.15.6 Long term orientation (LTO) vs. Short term orientation (STO)

The point at which the individual can hindrance his/her emotional physical and societal needs is the fifth dimension LTO and STO of Hofstede 1990. The firms that relied on LTO, revealed on goals, objectives and a clear roadmap to accomplish these goals while the STO demonstrates tactical responses and opportunistic behaviors.

2.15.7 Criticism

Numerous past researcher have criticize on Hofstede's model, Hofstede (1991) model is a non-comprehensive model Schwartz (1994) established from only one corporation (Schwartz, 1994; Smith, Dugan, & Trompenaars, 1996) lack of academic foundation (McSweeney, 2002) addition of the fifth dimension (long term orientation) directly accommodate the Asian culture, samples were not collected from the communist countries (Hofstede, 1980) significance of data as data was collected between the year

1969-1973 considered as out dated (McSweeney, 2002). According to the Smith et al. (1996), the dimensions of the findings of Hofstede's culture are not exhaustive because the valued sampled was not broad.

Hill, Loch, Straub, and El-Sheshai (1998) criticized Hofstede's approach in following three points. First, the existing research is culturally bound and shaped in a biased and concerned way because the research team belonged from America and Europe. Second, this research was conducted not in a single industry but a single company. Third, the results or finding of this research looks outdated. Culture always evolves over time and does not constant. The cultural factors in 1960s and 1970s were different as compared with today. As per Yoo and Donthu (2002) who criticized the (Hofstede, 1991), he studied the four dimension in the 22 Arab countries without studied them individually. Socially these countries may be same or different culture. Therefore a big question arises that the assumption for clustering these all countries in one group is valid and also to what extend it is appropriate in national cultures of various countries. Hofstede's neither studied the countries one by one nor made smaller regions while conducted these studies.

2.15.8 Acceptability

Despite of this healthy criticism on the national cultural dimensions of Hofstede's model, this is the most widely used in various fields such as psychology, management, marketing, human resource, administration and sociology (Søndergaard, 1994; Steenkamp, 2001). The Hofstede's study is the most comprehensive and vigorous as the national culture sample is considered Smith, Dugan et al. (1996), fit in every practical,

usable and simple studies related to the culture studies (Soares, Farhangmehr, & Shoham, 2007). Over and above, Hofstede's work is considered the most important in national culture framework and act as scientific theory in the studies related to the cross cultural research (Sekaran, 1983).

Kutter (2007) stated that the interdependence of Swartz dimensions (hierarchy versus egalitarianism and conservatism versus autonomy) with Hofsetede's dimensions (power distance and individualism vs. collectivism); the Hosfseteds's dimensions have optimum approach on national culture dimensions as compared to Swartz dimensions. In the marketing existing literature, the Hofestede's model is mostly used and incorporated in the studies especially the studies related to the customer perspective (Zhang, Lee, Huang, Zhang, & Huang, 2005).

Numerous authors have given different views while studying the national culture explored the cultural impact on TQM, he found that the uncertainty avoidance has influence on the TQM values (Larsen, 2003). National culture is the key element to determine the success and failure of the TQM initiatives among the countries. The power distance is the most influential dimension of Hofstede's model as the new technologies are concerned in the twentieth century (Mardani & Kazemilari, 2012). National culture explains the variation, the power distance and uncertainty avoidance are the powerful dimension to explain it (Matthews et al., 2001).

According to Mohammad Mosadeghrad (2013), the healthcare organizations in general and hospitals in particular with high power distance leads towards the failure of TQM practices because of centralized control over decision making. Total quality management results in the organizational settings resulted in success with less cost (Tata & Prasad, 1998). The cultural dimensions are statically related to the TQM practices to ensure high quality plans (Kull & Wacker, 2010). In the diverse cultural settings, policy making with TQM practices support have positive impact on the hospitals (Alrabeah, 2015).

Additionally Wahjudi, Singgih, Suwignyo, and Baihaqi (2014) investigated that in the organizational settings the national culture is fully influenced by the total quality management practices and TQM's practices implementations are widely reported. Power distance is the most important and effective culture dimension in the TQM practices settings. The top management can implement these dimensions in the organizational settings to get the desired results.

2.16 Summary

The current chapter provide the insight about the impact of TQM practices (infrastructural and core TQM) on the organizational performance. The situation of various diseases (communicable and non-communicable diseases) in Pakistan. The underpinning theories such as RBV and EFQM model are briefly discussed. Total quality management and its two types infrastructural and core TQM are also discussed with their dimensions. The dimensions of infrastructural TQM are leadership, human resource management, IT infrastructure and financial management. On the other hand, process

management, customer satisfaction and focus and continuous improvement are the dimensions of core TQM practices. Moreover, the conceptual framework on based of RBV and EFQM model is also proposed in this chapter. Five (5) hypotheses are developed from the previous studies. In the end of chapter, the national culture is also discussed in detail. In the next chapter the methodology used for the study will be explained.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

In this chapter, the research methodology used in the study is discussed. The following sections are discussed to illustrate the research design, the, population and sample, sample size of the study, sampling technique, unit of analysis, operationalization of variables, variables measurement, questionnaire scale, questionnaire pre-test, pilot study, data collection method and data analysis strategies.

3.2 Research Design

The research design consists of a string of decision that shapes an approach to test the hypothesis as well as to answer the research questions. The research design is also defined as the blue print of the study that set the procedures in order to attain research objectives (Sekaran & Bougie, 2016). The type of the research design can also explain the nature and most importantly the purpose of the study. Fundamentally, there are three (3) types of the research design (exploratory research, descriptive research, and causal research).

Purportedly, the objective of the study and the nature of the study can define the choice of the research design. Followings points defined the rationale to choice this study;

1) This study is descriptive in nature so the descriptive research design was adopted. The purpose of the study is to investigate the relationship among the variables that exist in the study i.e. infrastructural TQM (leadership, financial management, information technology

infrastructure and human resource management), core TQM (customer focus and satisfaction, continuous improvement, process management), national culture (power distance, uncertainty avoidance) and organizational performance (customer perspective, internal process perspective, learning and growth and financial perspective).

2) The existing study was causal in nature. Core TQM was used in the study as a mediator between the infrastructural TQM and the organizational performance. The national culture incorporated as a moderator between the core TQM on the organizational performance.

3) This study was cross sectional study as the data was collected in one shot.

4) Probability sampling technique was adopted and proportionate stratified random sampling was used to more generalize the findings of the study.

5) This study was quantitative in nature and survey method (questionnaire) was used to collect the data. Therefore, the influence of the researcher was minimal.

3.3 Population and Sample

3.3.1 The population of the study

The population is defined as the entire group of people or elements that the researcher wants to study (Sekaran & Bougie, 2003). In any study, it is imperative to determine the target population prior to the sampling method as this helps to guarantee that the data collected from an informed source contributes to the research objectives. Heads of Departments of public hospitals in Pakistan were requested to participate in the research. There were a total of 1284 departments in 72 public hospitals in Pakistan. All hospital

are located in (metropolitan city) urban area. The departments that were considered in the study while taking the sampling are obstetrics & gynecology, general surgery, gastroenterology, orthopedic surgery, ENT (ear, nose and eye), urology, dental clinic, emergency, pediatrics, pharmacy, laboratory, dialysis, and radiography or ultrasound. Therefore, the population for this study is 1284 departments of public sector hospitals. Every department has one Head of Department. Table 3.1 shows the details of the public hospitals available in Pakistan.

Table 3.1
Number of public hospitals available in Pakistan

Areas/ Provinces	Public hospitals	No of departments in public hospitals	% of Population	Desired No of Sample size
Government of the Punjab	28	588	46%	296
Government of Sindh	20	360	28%	180
Government of Khyber Pakhtunkhwa	14	238	18%	116
Government of Balochistan	04	46	4%	26
Government of Azad Jammu & Kashmir	06	52	4%	26
Total	72	1284	100%	644

3.3.2 Sample size of the study

The target population was the Heads of Departments of 1284 departments in public hospitals operated by the government. It is a key element in the research to select the sample which best represents the population. Due to the maximum possible representations from the population, the inferences drawn from the samples can be easily generalized to the population of interest (Bhattacherjee, 2012). This research will utilize departments as a sampling frame which is the list of ultimate sampling entities. The

department type organization is able to represent the common characteristics of the population to describe generalized conclusions.

The sampling frame has been taken from 1284 departments in 72 state run hospital departments official web directories in order to collect the most current information. However, the ever-increasing demand for research has created a need for an efficient method of determining the sample size needed to be representative of a given population. As mentioned earlier, there were 1284 departments in the 72 public hospitals located in Pakistan. By referring to the sample size table generated by Sekaran and Bougie (2010), for a given population of 1284, a sample size of 322 was required to represent the population of this study. Cohen and Manion (2001) proposed that in determining the sample size one has to ponder the significant levels and the sampling error. The researcher determined the sample size by taking into consideration the significance level at $p < 0.05$ (at 95% confidence level) and this statement were supported by Sekaran and Bougie (2010). Table 3.2 shows the sample size, significance level, and the sampling error. According to Mellahi and Harris (2016), response rates in business and management research in Pakistan/India region is 52.68%. So based on the findings of Mellahi and Harris (2016) that in past researches almost 50% of respondents returned the questionnaires, the number of questionnaires distributed in all public hospitals will be doubled to 644.

Table 3.2
Sample Size

Population Size	Sampling Error 5% 95% Level of Certainty (Significance Level = 0.05)	Sampling Error 1% 99% Level of Certainty (Significance Level = 0.01)
	Sample Size	Sample Size
50	44	50
100	79	99
200	132	196
500	217	476
1000	278	907
2000	322	1661
5000	357	3311
10000	370	4950
20000	377	6578
30000	379	7000
50000	381	8195
100000	383	8926
1000000	384	9706

3.3.3 Sampling technique

Proportionate stratified random sampling (Sekaran & Bougie, 2010); was used in this study. Under which, first, the population was divided into meaningful segments and subjects were drawn in proportion to their original numbers in the population. In this case, the population of each province was considered as segments and the samples were drawn based on the proportion it represents.

3.4 Unit of Analysis

The unit of analysis is the major entity that is being analyzed in a study. It is the 'what' or 'who' that is being studied. In social science research, typical units of analysis include individuals (most common), groups, social organizations and social artifacts(Yurdusev,

1993). It has been mentioned earlier that the sample of this study comprises Heads of Departments working in public hospitals in Pakistan. Thus, the unit of analysis in this study is organizational as Heads of Department can potentially give a better overview and blue print of the organizational components and the organizational position in terms of performance.

3.5 Measurement

With the exception of demographic information, all other variables included in this study are measured using multiple items adapted from past studies. However, in order that they are fit for the current study, some changes in wording were made on these borrowed items. Table 3.3 summarizes the variables and the total number of items used to measure the each of the variables.

Table 3.3
Summary of Variables and Total Number of Items

Constructs	Number of items	Sources
Leadership	4 items	Xiong, He, Ke, and Zhang (2016)
Human Resource Management	4 items	Ismail Ababaneh (2010)
Financial Management	4 items	Munge, Kimani, and Ngugi (2016)
Information technology infrastructure	6 items	Jain (2007)
Continues Improvement	4 items	Al-Dhaafri (2014)
Process Management	7 items	Xiong et al. (2016), Zu (2009)
Customer focus and Satisfaction	5 items	Xiong et al. (2016)
Customer perspective	5 items	Mohammed and Taib (2016)

Table 3.3 (Continue)

Constructs	Number of items	Sources
Internal process perspective	4 items	Mohammed and Taib (2016)
Financial perspective	4 items	Mohammed and Taib (2016)
Learning and growth	6 items	Mohammed and Taib (2016)
Power distance	4 items	Wu, Taylor, and Chen (2001)
Uncertainty avoidance	4 items	Wu et al. (2001)

3.5.1 Leadership

Leadership was measured by four items adopt from (Xiong et al., 2016). The coefficient alpha of these instruments was 0.87. Each item is measured on a seven-point Likert scale. The items used to measure behavioral intention are given below.

Leadership (4 items)

1. Our hospital's top management supports a long-term quality improvement process and provides the necessary and continuous resources for quality improvement.
2. Our hospital's top management participates in quality improvement activities.
3. Quality is considered as a strategic priority by top management.
4. Our hospital's top management makes strategic quality planning based on customers' requirements.

3.5.2 Human Resource Management

The HRM was measured by four items adapted from (Ismail Ababaneh, 2010). All items are measured on a seven-point Likert scale. The items used to measure behavioral intention are given below.

Human Resource Management (4 items)

1. In our hospital teams and committees are formed to improve health service quality.
2. In our hospital quality training courses are held periodically.
3. In our hospital recommendations and suggestions provided by employees are utilized to improve health service quality.
4. In our hospital employees are rewarded for their contributions to quality practices.

3.5.3 Financial Management

Financial management was measured by four items adapted from (Munge et al., 2016). This measure contains four items, and all the items are measured using a seven-point Likert scale. The items for measuring financial management are given below.

Financial management (4 items)

1. Our hospital increase fees from time to time.
2. Some operations in our hospital are run on debt.
3. Sometimes, there is misdirection and misallocation of funds.
4. Development projects are adequately financed.

3.5.4 Information technology infrastructure

Information technology infrastructure was measured by six items adapted from (Jain, 2007). All items are measured using a seven-point Likert scale. The items for measuring information technology infrastructure are given below.

1. Hospital management are able to enforce standards that ensure compatibility of new IT platforms with existing ones

2. Hospital management follows processes through which legacy IT systems do not limit the development of new IT systems.
3. Hospital management is able to integrate different and distributed IT systems by keeping the data architecture flexible.
4. Hospital management is able to make evolutionary changes to IT platforms.
5. By linking different and distributed IT platforms, hospital IT infrastructure has helped us to integrate internal and inter hospital processes.
6. Hospital management are effective in supporting new strategic initiatives by keeping IT systems scalable

3.5.5 Continuous improvement

Continuous improvement was measured by 4 items adapted from (Al-Dhaafri, 2014). All items are measured using a seven-point Likert scale. The items for measuring continuous improvement are given below.

1. In our hospital, there is always an emphasis on the continuous improvement in all the activities at various levels.
2. In our hospital, continuous improvement is emphasized in the training programs provided to employees.
3. In our hospital policies, improving the quality is more important than the quantity and short term goals.
4. In our hospital, all departments and stations believe that by implementing continuous improvement strategies, they can survive and serve better in the highly competitive environment.

3.5.6 Process Management

Process management was measured by seven items adopted from (Xiong et al., 2016; Zu, 2009). All items are measured using a seven-point Likert scale. The items for measuring continuous improvement are given below.

1. Processes in our hospital are designed/improved based on customers' requirements.
2. Use of preventive controls to ensure quality services in our hospital.
3. Our hospital makes extensive use of statistical techniques to reduce variation in processes.
4. Our hospital has good plans for an emergency to ensure operations not to be interrupted.
5. Our hospital conducts preventive equipment maintenance.
6. Clear work or process instructions are given to employees.
7. Our hospital wards are well organized and clean.

3.5.7 Customer Focus and Satisfaction

Customer focus and satisfaction was measured by six items adopted from (Xiong et al., 2016). All items are measured using a seven-point Likert scale. The items for measuring customer focus and satisfaction are given below.

1. Our hospital is in close contact with patients and other customers.
2. Our customers give us feedback on quality and delivery performance.
3. Our hospital regularly carries out external customers' satisfaction survey.
4. We use customer requirements and expectations as the basis for quality.

5. Our employees know who our customers are.

3.5.8 Customer perspective

Customer perspective was measured by five items adapted from (Mohammed & Taib, 2016). This scale coefficient alpha is 0.829. The items to measure the customer

1. The hospital conducts an annual survey to determine the patient's satisfaction with the hospital performance.
2. Patients get courtesy and respect from the medical staff and administrative.
3. The hospital offers services for patients in shortest possible time.
4. The hospital is keen to provide high quality services.
5. Patients have a good image of the management reputation.

3.5.9 Internal process perspective

Internal process perspective was measured by four items adapted from (Mohammed & Taib, 2016). It produced an alpha coefficient of 0.822. The items to measure the internal process perspective construct are given below

1. The hospital offers a number of new services (i.e. endoscopy, MRI, CT scan or Angiography).
2. The hospital provides an acceptable ratio of medical staff to patients.
3. The hospital offers all the facilities (i.e. medical equipment and medicine) in proportion to the number of patients.
4. The hospital provides to meet scientific requirements of the all activities.

3.5.10 Learning and growth

Learning and growth were measured by six items adapted from (Mohammed & Taib, 2016). The coefficient alpha from the past study for this measure was 0.868. All items are measured using a seven-point Likert scale. The items to measure the internal process perspective construct are given below

1. Hospital top management encourages the Medical staff to receive awards such as patents, excellence awards
2. Hospital top management dealing seriously with the Medical staff suggestions
3. Hospital top management is keen to adaption to new technology and new ideas.
4. Hospital top management contributes to the involvement of all the staff to develop competencies.
5. Hospital top management encourages Medical staff to increase research productivity.
6. Medical excellence is top management objective (through an increasing publish articles in journals, scientific conferences, and scientific awards)

3.5.11 Financial perspective

Financial perspective was measured by four items adapted from(Mohammed & Taib, 2016). The alpha coefficient was 0.832. Financial perspective items are measured using a seven-point Likert scale. The items to measure the financial perspective construct are given below

1. Hospital top management gets an increase in the funding rate from time to time.
2. Investment in human resources is a priority of hospital top management.

3. Hospital top management encourages medical staff to get annual grants.
4. Hospital top management encourages to more efficient and effective use of financial resources.

3.5.12 Power distance

Power distance was measured by four items adapted from(Wu et al., 2001). All items used to measure construct in this study power distance were measured using a seven-point Likert scale. The items to measure the construct are given below

1. In our hospital, subordinates are afraid to express disagreement with their superior.
2. In our hospital supervisor usually makes decisions on his/her own and then expects the decisions to be carried out loyally and without raising difficulties
3. In our hospital supervisor usually makes decisions on his/her own but before going ahead explains the reasons for the decisions and answers any questions
4. I prefer to work for any type of supervisor expect for one who asks me for advice and then announces his/her decision and expects me to loyally implement the decision whether or not it was in accordance with the advice I gave.

3.5.13 Uncertainty avoidance

Uncertainty avoidance was measured by four items adapted from (Wu et al., 2001). All items used to measure construct in this study power distance were measured using a seven-point Likert scale. The items to measure the construct are given below

1. In our hospital, it is very important to follow organizational rules even if I think it is in the organization's best interests if I break the rules.
2. It is important for me to work in a well-designed job situation where the responsibilities and requirements are clear.
3. It is very important for me to have long term security of employment.
4. It is very important for me to have little tension and stress on the job.

3.6 Questionnaire Pre-Test/Content Validity

Before conducting the actual survey, an initial draft of the questionnaire was pre-tested by asking experts to read through and see if there were any ambiguities which had not been noticed by the researcher. Pretesting refers to the degree at which a measure covers the domain of the concepts under study or how well the dimensions and items of constructs in this study have been delineated (Sekaran & Bougie, 2016). Pretesting involves consulting a panel of judges or experts to ascertain the validity of the items. Thus, a two steps practice was applied to develop and refine the survey questionnaire. Firstly, content or face validity is warranted by three academicians who have obtained a doctorate in the field of Public Management. Subsequently, face validity discussions with seven health practitioners were organized to obtain comments, suggestions, and improvement towards the developed instrument. Based on these evaluation criteria, corrections and improvements were suggested including the change of word 'organization' to 'hospital'; improvement in the length of statements; restructuring of the demographics information; and spelling errors corrections. All corrections and

suggestions for improvement were noted and reflected in the survey instrument before it was administered to the respondents.

3.6.1 Pilot study

A pilot study is the rehearsal of the main survey, carried out to ascertain the weaknesses (if any) in the questionnaires and also of the survey techniques. This is done in order to predict an appropriate sample size and improve the study techniques before the study goes live (Hulley, 2007). The main reason for undertaking pilot survey include determining the validity and reliability of the questionnaire items; assessing the adequacy of the wordings of the items, phrases and the construction of the questions to generate accurate results; evaluating the items to determine their ability to yield better response; and to determine the ability of the respondents to provide the needed data (Sekaran & Bougie, 2016).

The sample size of the pilot study group ranges from 25 or 50 subjects or from 25 to 100 subjects (Zikmund, 2003). A total of 100 questionnaires were sent out for the pilot survey. However, only 76 questionnaires were received from the Heads of Department of various public hospitals located in Pakistan and 12 were discarded due to their incompleteness. This research used Cronbach-alpha to indicate the reliability of the instrument as it is a common method of estimating the internal consistencies of items (Onwuegbuzie & Daniel, 2002). An alpha value of 0.7 (Bagozzi & Yi, 1988) is considered reliable. The Cronbach alpha for each of the variables used in this research ranges from 0.874 - 0.703 indicating that all variables are reliable. The pilot study allows

checking questionnaire reliability in the health sector with specific respondents in Pakistan.

Table 3.4
Cronbach's Alpha

S/No	Constructs	No of items	Cronbach's Alpha
1	Uncertainty avoidance (UA)	4	.703
2	Power distance (PD)	4	.735
3	Leadership (LD)	4	.707
4	Human resource management (HRM)	4	.791
5	Financial Management (FM)	4	.762
6	Information technology infrastructure	4	.874
7	Customer focus and satisfaction (CFS)	5	.746
8	Process management (PM)	7	.817
9	Continuous improvement (CI)	4	.726
10	Customer perspective (CP)	5	.784
11	Financial perspective (FP)	4	.789
12	Learning and growth (LG)	6	.771
13	Internal process perspective (IPP)	4	.779

3.7 Data collection

In the present study, the actual data collection was carried out from April 2017 to November 2017. A total of 644 questionnaires were distributed to Heads of Department in the public hospitals. The data were collected through self-administered questionnaires. In the initial stage of data collection, an official letter was collected from the School of Government, introducing the researcher and explaining the purpose of the study. This was to enable the researcher to get support from the administration of the hospital.

In the second stage of the data collection, the survey package was sent to the administration of hospitals who assisted in the administration of the questionnaires. The survey package was in a foolscap sized envelope with a cover letter, the questionnaire

and a pen with UUM logo, to motivate the participants to respond to the survey. The cover letter clearly highlights the background and purpose of the study. The cover letter also provides instructions on how to answer and return the questionnaire. To further increase the willingness of the participants to respond, their anonymity and confidentiality were assured in the cover letter.

Despite the encouraging responses, follow-up phone calls and text messages were also sent to the administration members of the hospitals to remind the participants who were yet to complete their questionnaires. Despite the fact that they were assured about the confidentiality of their responses yet, it was still difficult to get some of the participants to return their questionnaires. Therefore, the administrative members of the hospitals helped in sending gentle reminders through notice boards and group emails.

It is practically impossible to collect data without encountering some problems. One of the major problems encountered during the course of data collection was related to the geographical location of the participating hospitals as many of them were sparsely distributed in remote areas of the states. Another problem encountered during the data collection was related to the time taken to collect back the completed questionnaires. Henceforth, the data collection exercise took eight months. Out of a total of 644 questionnaires distributed to the Heads of Department, 445 were returned from which, 67 were discarded due to their incomplete state. Finally, 378 questionnaires were used for further data analysis.

3.8 Data Analysis Strategy

3.8.1 Structural Equation Modeling (SEM)

Structural equation modeling (SEM) is one of the most useful advanced statistical analysis techniques that have emerged in social sciences (Henseler et al., 2014). Structural equation modeling (SEM) represents the second generation of multivariate analysis techniques that are capable of analyzing numerous latent variables and relationships simultaneously (Chin, 1998). SEM offers several advantages over first generation techniques such as cluster analysis, multidimensional scaling, logistic regression and multiple regression (Chin, 1998); for example, SEM provides more flexibility for the researcher enabling the incorporation of numerous unobservable variables (i.e. latent variables) through the measurement of the indicator variables. SEM is also able to account for error measurement in observable variables (Chin, 1998). These methods are suitable for the study that needs to indirectly estimate unobserved latent variables (Chin & Todd, 1995; McIver & Carmines, 1981). There are two analytical techniques in SEM which include covariance based structural equation modeling (CB-SEM) (Jöreskog, 1971; Joreskog & Sorbom, 1996) and partial least squares structural equation modeling (PLS-SEM) (Wold, 1973, 1974, 1975).

3.8.2 Covariance-Based Structural Equation Modeling (CB-SEM)

The objective of CB-SEM is to reproduce the theoretical covariance matrix, without focusing on explained variance (Falk & Miller, 1992). CB-SEM is used by tools such as EQS, AMOS, and SEPATH. CB-SEM depends on maximum likelihood (ML) function

which aims at decreasing the difference between the sample covariance and those predicted by the theoretical model (Chin, 1998; Hair, Ringle, & Sarstedt, 2011).

3.8.3 Partial Least Square Structural Equation Modeling (PLS-SEM)

The objective of PLS-SEM is to maximize the explained variance of the endogenous latent constructs (Falk & Miller, 1992). PLS-SEM is used by tools such as SmartPLS. PLS-SEM is considered a variance-based approach; this technique depends on least squares functions and it attempts to maximize the explained variance of the dependent variables (Hair et al., 2011; Henseler et al., 2014). PLS-SEM provides a systematic evaluation process of the proposed model and it involves a two-step process. The first step is the assessment of the measurement model followed by the assessment of the structural model (Hair Jr, Hult, Ringle, & Sarstedt, 2016). In order to crystal clear the aforementioned discussion between CB-SEM and PLS-SEM, a comparison of CB-SEM and PLS-SEM is illustrated in Table as follows. The comparison helped the researcher in deciding the approach to be chosen (Hair, Sarstedt, Ringle, & Mena, 2012).

Table 3.5
Comparison of CB-SEM/PLS-SEM

Criterion	PLS (Variance based SEM)	Covariance-based SEM
Objective	Prediction oriented	Parameter oriented
Approach	Variance	Covariance
Assumption	Nonparametric	Parametric
Implication	Optimal for prediction	Optimal for parameter estimation
Parameter estimates	Explicitly estimated	Indeterminate
Model complexity	Large complexity	Small to moderate complexity
Sample size	Minimum of 20-100	200-800

3.8.4 The reasoning for using Partial Least Square Structural Equation Modeling (PLS-SEM)

PLS path modeling is more suitable when dealing with real life applications. And according to (Fornell & Bookstein, 1982; Hulland, 1999) it is always a useful tool to handle complex models because the soft modeling assumptions allow it to estimate complex and large models. In this study, however, relationships among the constructs (i.e. infrastructure TQM, core TQM, national culture and hospital performance) were examined by employing PLS-SEM techniques for better prediction.

Additionally, social science and management researches tend to be associated with the problem of data normality, but PLS path modeling treats non-normal data reasonably well, due to its ability to model latent variables under non-normality conditions such that the data normality is no more a problem in PLS environment (Chin, 1998). As such, this study employs PLS path modeling to avoid the problem of normality that might likely occur during data analysis. Ronkko, McIntosh, and Antonakis (2015) argues that while other methods of analysis often result in inconclusive results and might require additional analyses, PLS-SEM offers valid and more meaningful results. Thus, it is adjudged one of the best statistical tools for social scientists to simultaneously test multiple relationships.

3.9 Summary

This chapter designates the methodology of this study. Precisely, the research approach, resign design, population, sample size, sampling technique and procedure, unit of analysis, measurement and operationalization of variables are discussed. Furthermore, the chapter also report the pilot study's outcomes, data collection procedures and data

analysis techniques. The next chapter will present the results of the data analysis and findings.

CHAPTER FOUR

RESULTS AND FINDINGS

4.1 Introduction

Using PLS path modeling, this chapter provides the results of the current study. First, the initial data screening and preliminary analysis were discussed. Results of the descriptive statistics for all the latent variables are reported. Second, the main results of the present study are presented. These results are divided into two major sections. Section one describes and discusses the measurement model which was assessed for determining the individual item reliability, internal consistency reliability, convergent validity, and discriminant validity. Section two, presents the results of the structural model discussing the significance of the path coefficients, the level of the R-squared values, effect size, and predictive relevance of the model. Finally, the results of the complementary PLS-SEM analysis are presented; these results examine the mediating and moderating effect on the organizational performance. A summary of hypothesis testing is presented to simplify the results and findings of the study. Lastly, a chapter summary is provided at the end of this chapter as an overview of this chapter.

4.2 Analysis of Survey Response

4.2.1 Response Rate

The data used for this research were collected from 72 public hospitals which were recognized from (Pakistan medical & dental council, 2017) and are situated in the Pakistan. The total number of 644 questionnaires was distributed to the public hospital. In

order to improve the response rate at highest possible level, phone call reminders (Silva, Smith, & Bammer, 2002; Traina, MacLean, Park, & Kahn, 2005) were sent after two weeks. As a result, 445 questionnaires were returned out of 644 questionnaires that were distributed to the participants which make the response rate to be 69%. Besides that, only 378 questionnaires were useful for further analysis out of 445 returned questionnaires, making the valid response rate to be 58.69.%. This is because out of the 445 questionnaires collected, 67 were discovered to be wrongly filled or incomplete as several missing data per case has been observed. So they were rejected for further analysis. Researchers like J. Hair (2010) and Sekaran and Bougie (2003)have recommended the response rate of 30% for the survey as fits for analysis. Thus, the valid response rate of 58.69% is good and acceptable to achieve the objective of this study, as shown in Table 4.1.

Table 4.1
Response rate of the questionnaire

Response Rate of the Questionnaires Response	**Frequency/Rate**
Number of questionnaires distributed	644
Number of returned questionnaires	445
Number of returned/usable questionnaire	378
Number of excluded questionnaires	67
Questionnaires not returned	199
Response rate	69.09%
Valid response rate	**58.69%**

4.3 Missing Value

Missing data are often a human-centered problem in a survey research. It occurs when a respondent either fails to answer one or more question(s), consciously or unconsciously; which may negatively affect the outcome of the empirical research if not properly treated before analyzing the collected data. According to Hair et al. (2014), when the amount of missing data on a questionnaire exceeds 5%, the observations should be removed from the data file; if a high proportion of responses are missing for a single construct, then the entire observation may be removed even if the overall missing data on the questionnaire does not exceed 5%; Other alternatives such as mean value replacement or case wise deletion can also be used in the treatment of missing data. Missing values should be replaced using mean when there are less than 5% missing values per item (Joseph F Hair, Hult, Ringle, & Sarstedt, 2014). In this study, missing value analysis indicated none of the indicators had 5% of missing values; it ranged from 0.2% to 1.5%. Moreover, Smart PLS-3 software allows users to detect any possible missing data; the missing value settings in the PLS-3 was used and it was discovered that there is no any item that was not responded to by the respondents.

4.4 Test for Non-Response Bias

According to (Berg, 2005) non-response bias refers to the errors one is likely to make for the estimation of a population characteristic based on a sample of survey data. Due to non-response, certain types of survey respondents are underrepresented. The bias occurs when non-responders (who do not respond to survey) differ from responders (those who respond) in a survey. According to Lambert and Harrington (1990) the non-response bias

is “the differences in the answers between non-respondents and respondents”. The time-trend extrapolation approach is suggested for estimating the possibility of non-response bias. This approach compares responses that were received early and late (i.e. no respondents) (Armstrong & Overton, 1977). Further to this, the authors have also argued that late-respondents share similar characteristics with non-respondents. Drawing up (Armstrong & Overton, 1977), all the respondents were divided into two major groups i-e those who responded within 30 days (considering them as early respondents) and those who responded after 30 days (Late respondents) (Vink & Boomsma, 2008). A total of 284 (75%) responses were received within 30 days after questionnaire distribution, while 94 (25%) were received after 30 days. Table 4.2 presents detailed information in this regard. Particularly, for detecting any possible non-response bias an independent test was employed on the variables of the study; the results of the test are presented in Table 4.2.

Table 4.2

Result of the Independent-Samples T-test for Non-Response Bias

						Levene's Test for Equality of variances	
Variables	**Group**	**N**	**Mean**	**Std. Deviation**	**Std. Error Mean**	**F**	**Sig.**
UA	Early Response	284	5.4120	1.10779	.06574	.043	.836
	Late Response	94	5.4415	1.14384	.11798		
PD	Early Response	284	4.8019	1.06593	.06325	.437	.509
	Late Response	94	4.7500	1.03436	.10669		
LD	Early Response	284	4.2025	1.21240	.07194	.846	.358
	Late Response	94	4.0319	1.10487	.11396		
HRM	Early Response	284	4.8521	.84937	.05040	.422	.517
	Late Response	94	4.9016	.81338	.08389		

Table 4.2 (Continue)

						Levene's Test for Equality of variances	
Variables	**Group**	**N**	**Mean**	**Std. Deviation**	**Std. Error Mean**	**F**	**Sig.**
FM	Early Response	284	5.0352	.85400	.05068	1.756	.186
	Late Response	94	5.0931	.93756	.09670		
ITI	Early Response	284	4.3022	.83322	.04944	.045	.833
	Late Response	94	4.2518	.80646	.08318		
CFS	Early Response	284	4.9592	.85600	.05079	.097	.756
	Late Response	94	4.9851	.80228	.08275		
CI	Early Response	284	4.7949	.98238	.05829	.003	.959
	Late Response	94	4.9787	.97458	.10052		
PM	Early Response	284	4.4196	.95916	.05692	.002	.968
	Late Response	94	4.2908	.90990	.09385		
IPP	Early Response	284	4.3961	.83048	.04928	.539	.463
	Late Response	94	4.4362	.78283	.08074		
LG	Early Response	284	4.1473	1.06646	.06328	.124	.724
	Late Response	94	3.9043	1.04026	.10729		
CP	Early Response	284	4.9627	.87033	.05164	.227	.634
	Late Response	94	4.9660	.83712	.08634		
FP	Early Response	284	5.1356	.94276	.05594	.008	.928
	Late Response	94	5.2500	.93541	.09648		

According to Pallant (2011), the threshold for Levene's test of significance for the quality of variances should be a value greater than 0.05. From table above, the results of

the independent-samples t-test demonstrate that the equal variance significance values for each of the seven main study constructs were above the 0.05 significance level. Thus, the assumption of equality of variance between the early and late respondents has not been violated.

4.5 Test of Common Method Bias

Common method variance (CMV) is defined as the amount of spurious covariance shared among variables because the common method is used in the collection of data (Buckley, Cote, & Comstock, 1990). These method biases create problems as the actual phenomenon under investigation becomes difficult to differentiate from measurements` artifacts (Hufnagel & Conca, 1994; Malhotra, Kim, & Patil, 2006). Many sources can cause these common method biases, some of most widely cited are ambiguous wording (Malhotra et al., 2006), and scale length (Harrison, Chadwick, & Scales, 1996). In addition to this, common method variance (CMV) is also defined as "variance that is attributable to the measurement method rather than to the construct of interest" (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). Researchers at large have the opinion that in self-reporting survey method, the common method variance should be a major concern (Podsakoff, MacKenzie, & Podsakoff, 2012). The "Common method bias inflates relationships between variables measured by self-reporting" (Conway & Lance, 2010; Meier & O'Toole, 2012). Similarly, Organ and Ryan (1995) while conducting a meta-analytic review of 55 studies stated that, studies which are conducted using self-report survey method are associated with high level of correlations due to CMV. For minimizing the effects of common method variance the present study followed on several

procedural remedies (Podsakoff et al., 2003; Podsakoff et al., 2012). First, it was informed to the respondents that there exists no right and wrong answer to the statements (items) which they were supposed to be responded. Additionally, the respondents were also assured in terms of their responses` confidentiality. Secondly, the present study employed improving-scale items approach to reduce method biases. For doing so, the items used in the scale were written using simple, specific, and clear language.

Apart from the above remedies, the Harman's single factor test was adopted for examining the common method bias (Podsakoff et al., 2003; Podsakoff & Organ, 1986). Under the CMV process, all the variables of the study were subjected to an exploratory factor analysis and from where the results of the unrotated factor solution were assessed for ascertaining the number of factors necessary to account for the variance in the variables (Podsakoff et al., 2003). As per the main assumption of Harman's single factor test, if a substantial amount of common method exists, either a single or a general factor emerges, this would then account for most of the covariance in the predictor and criterion variables (Podsakoff et al., 2003; Podsakoff & Organ, 1986). Following on these guidelines, all the items in the present study were subjected to a principal component factor analysis. The results showed that no single factor accounted for most of the variance in the variables. The first factor accounted for only 21.269 % of the variance. Hence, common method bias is not a significant issue in this study. This variance is below than 50% (Kumar, 2012). Additionally, the present study results also indicate that no single factor accounted for the majority of covariance amongst the predictor and criterion variables (Podsakoff et al., 2012). Therefore, the common method bias is

unlikely to inflate relationship between variables of the study and is therefore not an issue.

4.6 Outlier

Assessment of outliers is a vital stage in data screening and data preparation for analysis and regarded as a determinant of results and strength of the predictive power of research model (Aguinis, Gottfredson, & Joo, 2013). As part of the data cleaning process, the data collected were checked for possible multivariate outliers. To do this, Mahalanobis distance was used to examine whether there were outliers among the data set. According to Tabachnick and Fidell (2007) Mahalanobis distance (D2) is "the distance of a case from the centroid of the remaining cases where the centroid is the point created at the intersection of the means of all the variables". Based on the 61 observed variables of the study, the recommended threshold of chi-squares 100.88 ($p< 0.01$). From the result of the analysis obtained that there is no case that exceeded the threshold value and as such, outliers are not a problem in this study.

4.7 Normality test

Joe F Hair, Sarstedt, Ringle, and Mena (2012) strongly recommended that researchers should perform a normality test on the dataset, before the actual PLS analysis; because highly skewed or kurtosis data can inflate the bootstrapped standard error estimates (Chernick, 2008), which in turn underestimate the statistical significance of the path coefficients (Dijkstra, 1983). In the current study statistical method was employed to check for the normality of data collected (Tabachnick & Fidell, 2007). For the statistical

method, the value of the skewness and kurtosis statistics were used to prevent the occurrence of non-normality. As a benchmark, normality for all variables shows that CR-skewness and CR-kurtosis are within the adequate range of normality (i.e., -3.0 to 3.0) (J. Hair, Black, Babin, Anderson, & Tatham, 2006).

Table 4.3

Results of normality test

Variables	N	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
UA	378	5.4193	1.11541	-.937	.125	.995	.250
PD	378	4.7890	1.05704	-.501	.125	.312	.250
LD	378	4.1601	1.18743	-.588	.125	.093	.250
HRM	378	4.8644	.83977	-.140	.125	.058	.250
FM	378	5.0496	.87461	-.298	.125	.027	.250
ITI	378	4.2897	.82588	-.156	.125	-.395	.250
CFS	378	4.9656	.84199	-.176	.125	.421	.250
CI	378	4.8406	.98238	-.548	.125	.431	.250
PM	378	4.3876	.94760	-.149	.125	.113	.250
IPP	378	4.4061	.81805	-.202	.125	-.142	.250
LG	378	4.0869	1.06385	-.361	.125	-.012	.250
CP	378	4.9635	.86109	-.355	.125	.000	.250
FP	378	5.1640	.94101	-.306	.125	.024	.250

4.8 Multicollinearity

Multicollinearity refers to a problem that occurs when the independent variable is highly correlated with other independent variables within a correlation matrix. The problem leads to a complexity within to determine the specific contribution of each independent variable that predicts the dependent variable (J. Hair, 2010). As strongly recommended by J. Hair (2010), multicollinearity assumptions among independent and dependent variables are necessary before performing the hypotheses testing of the model. As

generally agreed, the multicollinearity assumptions can be accomplished through testing the Tolerance value and Variance Inflation Factor (VIF) value (Pallant, 2011). The tolerance value is the indicator of determining the dependent variable prediction by other independent variables in the regression variate, while VIF is an indicator of the other independent variables that have an impact on the standard error of a regression coefficient. It is Tolerance inverse (J. Hair, 2010). Multicollinearity exists when the results show Tolerance values higher or equal 0.10 and VIF values below or equal 10 (Sekaran & Bougie, 2016). Table 4.4 below presents the results of the multicollinearity test using SPSS version 22.

Table 4.4
Multicollinearity Test based on Tolerance and VIF Values

Independent variables	Collinearity Statistics	
	Tolerance	**VIF**
UA	.986	1.014
PD	.930	1.075
LD	.655	1.528
HRM	.507	1.971
FM	.572	1.747
ITI	.680	1.471
CFS	.417	2.397
CI	.598	1.672
PM	.586	1.707
IPP	.710	1.408
LG	.605	1.652
CP	.527	1.899
FP	.490	2.039

4.9 Demographic Profiles of the Respondents

This section discusses the respondent general information. It provides information of personal demographic. In this section, the researcher intends to identify the personal demographic of respondents. The information includes age of respondents, gender,

ethnic, nationality, highest education, current position and years of service in current position.

4.9.1 Respondents' Age

Table 4.5 provides the results for the age categories of the respondents. 19.8% of the respondents are under the category of age below 30 years, while most of the respondents are under the category of 30-40 (37.8%). The third group consists of respondents with age 41-50 (20.9%) and the fourth group consists of respondents with age 51-60 (21.4%).

Table 4.5

Respondents age

Age of the respondents	Frequency	Percent
Below 30 years	75	19.8
30-40	143	37.8
41-50	79	20.9
51-60	81	21.4
Total	378	100.0

4.9.2 Respondents' Gender

The result in Table 4.6 shows that majority of the respondent are male. Pakistan in public sector hospital female is inferior as compare to male. In public hospital 70% and 30% male is working respectively. They are representing 80.4% from the research sample size, while 19.6% of respondents are female. The result shown male is nominating among executive position of the organization.

Table 4.6
Respondents gender

Gender	Frequency	Percent
Male	304	80.4
Female	74	19.6
Total	378	100.0

4.9.3 Respondents' Higher Qualification

In this study, the researcher classifies academic qualification rank into three which are as follows: (1) Master, (2) doctorate (PhD), (3) diploma or others. The descriptive analysis shown that 68 of the respondents are diploma which represents (18%) from the sample, 269 respondents (71.2%) are master. Moreover 41 respondents (10.8%) are doctorate. Table 4.7 below shows the respondents' higher qualification.

Table 4.7
Respondent's higher qualification

Qualification	Frequency	Percent
Master	269	71.2
PhD	41	10.8
Diploma or Other	68	18.0
Total	378	100.0

4.9.4 Respondents' Year of Service

Table 4.8 illustrates that 24.9% of the respondents have 1-5 working experience in current service position, while 34.4% have 6-10 years working experience. Seventy-two (66) of the respondents which represent 17.5% have 11-15 year working experience. While ninety-seven (88) respondents which represents 23.3% have more than 15 years

working experience. This shows that most of respondents are well experienced in automotive industry, in turn, it relevance of this research study.

Table 4.8
Respondents year of service

Working experience	Frequency	Percent
1-5 years	94	24.9
6-10 years	130	34.4
11-15 years	66	17.5
More than 15 years	88	23.3
Total	378	100.0

4.9.5 Hospital type

The results in Table 4.9 show that majority of respondents' hospital are general type. They are representing 84.7% from the research sample size, while 15.3% of the respondents are working in specialist hospital.

Table 4.9
Hospital type

Hospital Type	Frequency	Percent
General	320	84.7
Specialist	58	15.3
Total	378	100.0

4.9.6 Number of TQM programs implemented

The results in table 4.10 show 75.9% responding public teaching hospitals have implemented one quality program, while 24.1% responding public teaching hospitals had more than one quality program.

Table 4.10
Number of TQM programs implemented

TQM Programs	Frequency	Percent
Only one program	287	75.9
More than one program	91	24.1
Total	378	100.0

4.9.7 Length of time TQM programs adoption

The results in Table 4.11 show that 56.1% of the responding public teaching hospitals have implemented their total quality management programs for at least 1 year. While 29.6% of the responding public teaching hospitals have implemented total quality programs for less than one year.

Table 4.11
Time of TQM programs adoption

Time of TQM programs adoption	Frequency	Percent
Less than 1	112	29.6
1-3 year	212	56.1
More than three year	54	14.3
Total	378	100.0

4.10 Descriptive Analysis of the Latent Constructs

In this section the descriptive statics for the latent constructs are provided. The descriptive analysis was performed in order to explain the general situation of uncertainty avoidance, power distance, leadership, human resource management, financial management, information technology infrastructure, process management, customer focus and satisfaction, continuous improvement, financial perspective, customer perspective, learning and growth and internal process perspective. To do so, the descriptive statistics in the form of means and standard deviations were computed for the latent variables of the present study. The present study used seven-point Likert scale in order to measure all the latent variables, this scale was anchored by 1=strongly disagree and 7=strongly agree. Table 4.12 shows the tabulated results of the descriptive statistics for the latent variables of the present study.

Table 4.12
Descriptive statistics of the latent variables

Variables	Mean	Std. Deviation
UA	5.4193	1.11541
PD	4.7890	1.05704
LD	4.1601	1.18743
HRM	4.8644	.83977
FM	5.0496	.87461
ITI	4.2897	.82588
CFS	4.9656	.84199
CI	4.8406	.98238
PM	4.3876	.94760
IPP	4.4061	.81805
LG	4.0869	1.06385
CP	4.9635	.86109
FP	5.1640	.94101

4.10.1 Assessment of PLS-SEM Path Model Results

The present study employed a two-step process for evaluating and reporting PLS-SEM results (Jörg Henseler, Ringle, & Sinkovics, 2009). Just like in covariance based SEM analyses, the results of PLS analyses are conventionally presented using a two-step approach (Anderson & Gerbing, 1988; Jörg Henseler et al., 2009). Firstly, the measurement model is evaluated based on the reliability and validity of the measures used. The logic behind evaluation of the measurement model is to give researchers confident that the item measures used in a particular study are really representing the constructs of interest. Secondly, once the measurement model is evaluated and found to be reliable and valid, results of the structural model (i.e., theoretical model) are then presented (W. W. Chin, 1998). Therefore, the present study adopted two-step approach as recommended by Jörg Henseler et al. (2009) for the evaluation and reporting of the results of PLS-SEM path models. The two-step process consists of (1) assessment of measurement model and (2) assessment of structural model.

Since the model of this study contains first- and second-order constructs (higher-order construct), assessing the measurement model included both constructs. The first-order construct refers to the relationship between the indicators and their dimensions, while the second-order construct denotes the relationship between the dimensions and the latent constructs. The research model is shown in Figure 4.1, which displays the loading for each item and beta values.

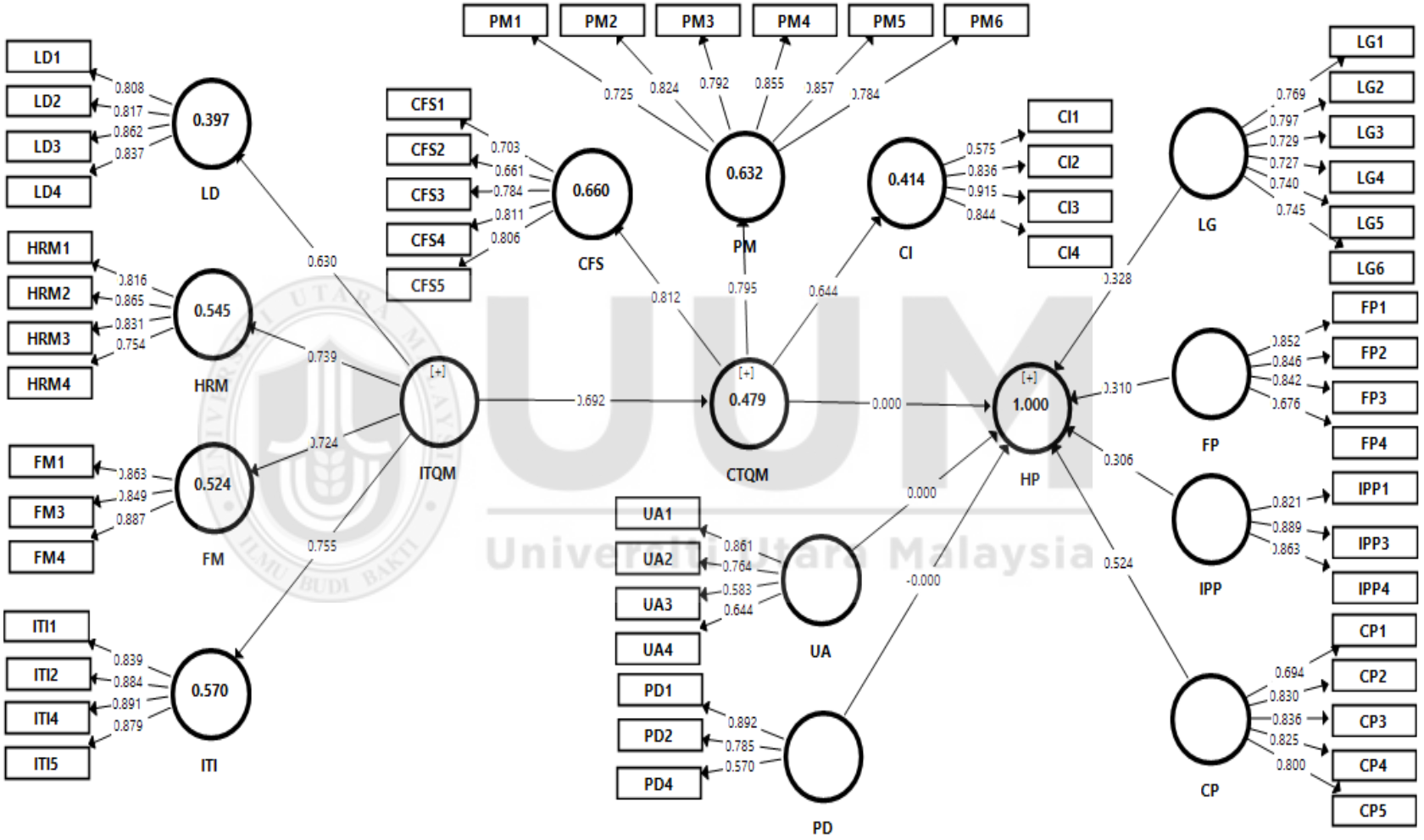

Figure 4.1: *Research Model of the study*

4.10.2 Evaluation of Measurement Model

Essentially, an important aspect in PLS model evaluation is the presentation of measurement model results, which focuses on ascertaining of individual item reliability, internal consistency reliability, convergent validity and discriminant validity of the measures used to represent each construct (Chin, 2010; Hair Jr, Hult, Ringle, & Sarstedt, 2016; Jörg Henseler et al., 2009).

4.10.3 Assessment of Individual Item Reliability

In the present study, individual item reliability was assessed by examining the indicator loadings of each construct's measure. In line with (Joseph F Hair et al., 2014) benchmark for retaining items with loadings between 0.50 and 0.70, it was found that 6 of the items were deleted as they demonstrated loadings below the benchmark of 0.40. Deleting item with loading below 0.40 in the PLS model improved the composite reliability and average variance extracted, which are further used subsequent evaluation of the measurement model. Accordingly, in the whole measurement model, 55 items were retained since they had loadings between 0.575 and 0.915 as shown Table 4.15 and Figure 4.1

4.10.4 Assessment of Internal Consistency Reliability

The internal consistency reliability is assessed after the uni-dimensionality of the indicators has been carried out. The Partial Least Square (PLS-3) employs the use of composite reliability (ρc) instead of Cronbach's alpha (α) which estimate the reliability based on the inter-correlations of the observed indicators variables to measure the internal

consistency reliability. The prioritization of items in accordance with their individual reliability by PLS-3 couples with the limitations of Cronbach's alpha (α) such as it assumes equality of all indicators loadings; it is sensitive to the number of indicators on a construct; and it underestimate the internal consistency reliability has made it imperatives for an alternative means of measuring internal consistency reliability which composite reliability (ρc) has readily fill the gaps. According to Hair et al. (2014), composite reliability (ρc) takes note of outer loadings of every indicator variable. As shown in Table 4.13 the composite reliability coefficient of each latent variable both in the first and second order are between the range of 0.797 and 0.928 which are above the threshold value of 0.7 (Hair et al, 2011). Thus, suggesting the adequacy of internal consistency reliability of the measures used in this study.

4.11 Convergent Validity

This measured the extent to which each indicator of a constructs shares a high proportions of variance and converges in comparison to indicators measuring other constructs. Convergent validity tests if whether an item measures the construct it is expected to Measure. The criterion for measuring convergent validity is the AVE proposed by (Fornell & Larcker, 1981). AVE which is equivalent to the communality of a construct is the sum of square loadings of indicators associated with a construct divided by the number of indicators. Convergent validity is achieved when the AVE value is 0.50 and above which means that, the construct explains more than half of the variance of its indicators on the average. When the value of AVE is below the threshold value of 0.50, convergent validity is not achieved because the construct on the average cannot explain the variance of its indicators due to errors in the items (Hair et al., 2014). As shown in

Table 4.13, there is adequate convergent validity of the measures as their AVE values ranges from 0.509 to 0.763 except policy that is a single item construct which has an AVE value of 1. As all the AVE value exceeded the minimum acceptable level of 0.5 (W. W. Chin, 1998) Therefore, convergent validity is achieved.

4.11.1 Assessment of Formative Constructs

In this study, there were two latent variables modeled as second-order formative constructs. They were managerial ties and organizational performance. Three steps were involved in assessing formative measures: (i) test for weight significant; (ii) test for multicollinearity; and (iii) test of the correlation of the indicators with the latent construct. First, the significance of the weights was assessed by using a bootstrapping technique to calculate the significance of path coefficients. The associated coefficients for the formative relationships are called outer weight in PLS-SEM (Joseph F Hair et al., 2014). As the interpretation of the weights is similar to beta coefficients in a standard regression model, it is usual to have lower absolute weights as compared to loadings. No minimum threshold value for indicator weights was set up. This study found that all specified paths between the constructs had significant path coefficients. The statistical significance of weights implies the relative importance of indicators in forming a latent construct. Next, multicollinearity between indicators was tested. To examine multicollinearity, variance inflation factor (VIF) was determined by using SPSS (refer Appendix). Researchers propose that VIF should not be greater than 5 (Joseph F Hair et al., 2014). The analysis demonstrated that all items had VIF of less than 5, indicating no threat of multicollinearity between the different indicators. Finally, the correlation of the

indicators with the latent construct was tested to find out their absolute contribution. Result revealed that all items had a significant weight and were correlated to the latent constructs. Consequently, all items in the formative construct were retained for further analysis. Table 4.13 presents the result.

Table 4.13

Reliability and validity of the constructs

First order constructs	Second order construct	Scale type	Item	Loadings	AVE	CR	Item deleted
Uncertainty avoidance		Reflective	UA1	0.861	0.520	0.809	None
			UA2	0.763			
			UA3	0.581			
			UA4	0.648			
Power distance		Reflective	PD1	0.893	0.578	0.800	PD3
			PD2	0.789			
			PD4	0.559			
Leadership		Reflective	LD1	0.808	0.691	0.899	None
			LD2	0.817			
			LD3	0.862			
			LD4	0.837			
Human Resource Management		Reflective	HRM1	0.816	0.668	0.889	None
			HRM2	0.865			
			HRM3	0.831			
			HRM4	0.754			
Financial Management		Reflective	FM1	0.863	0.751	0.901	FM2
			FM3	0.849			
			FM4	0.887			
IT infrastructure		Reflective	ITI1	0.839	0.763	0.928	ITI3
			ITI2	0.884			ITI6
			ITI4	0.891			
			ITI5	0.879			
	Infrastructure TQM	Reflective					None
			Leadership	0.631	0.509	0.805	
			Human resource management	0.737			
			Financial management	0.726			
			IT infrastructure	0.754			

Table 4.13 (Continue)

First order constructs	Second order construct	Scale type	Item	Loadings	AVE	CR	Item deleted
Customer focus Satisfaction		Reflective	CFS1	0.702	0.571	0.869	None
			CFS2	0.660			
			CFS3	0.785			
			CFS4	0.812			
			CFS5	0.807			
Process management		Reflective	PM1	0.724	0.652	0.918	PM7
			PM2	0.824			
			PM3	0.792			
			PM4	0.858			
			PM5	0.857			
			PM6	0.784			
Continuous improvement		Reflective	CI1	0.575	0.645	0.876	None
			CI2	0.836			
			CI3	0.915			
			CI4	0.844			
	Core TQM	Reflective					
			Customer focus/Satisfaction	0.809	0.568	0.797	
				0.795			
			Process management	0.646			
			Continuous improvement				
Customer perspective		Reflective	CP1	0.694	0.638	0.898	None
			CP2	0.830			
			CP3	0.836			
			CP4	0.825			
			CP5	0.800			
Internal process perspective		Reflective	IPP1	0.822	0.736	0.893	IPP2
			IPP3	0.889			
			IPP4	0.863			

Table 4.13 (Continue)

First order constructs	Second order construct	Scale type	Item	Loadings	AVE	CR	Item deleted
Financial perspective		Reflective	FP1	0.852	0.652	0.881	None
			FP2	0.846			
			FP3	0.842			
			FP4	0.676			
Learning/Growth		Reflective	LG1	0.769	0.565	0.886	None
			LG2	0.798			
			LG3	0.729			
			LG4	0.727			
			LG5	0.740			
			LG6	0.745			
First Order Construct	**Second Order construct**	**Scale Type**	**Items**	**Weights**	**VIF**	**t-value**	**Item deleted**
	Hospital performance	Formative	Customer perspective	0.528	1.899	13.152	None
			Internal process perspective	0.306	1.408	14.267	
				0.307	2.039	3.622	
			Financial perspective	0.327	1.652	4.678	
			Learning/Growth				

4.12 Discriminant Validity

A main requirement for the discriminant validity is that the shared variance between the variable and its indicator to be larger than the variance shared with other variables. The discriminant validity is achieved when the square root of the average variance extracted is greater than the correlation between the constructs. Accordingly, the reflective measurement for validation process of the model of this study had been achieved and finalized. This model consisted of a reflective measure; therefore, three approaches were used to determine discriminant validity, namely Fornell-Larcker criterion, cross-loadings and heterotrait-monotrait (HTMT) ratio discriminant validity criteria. This approach asserts that a latent variable to be better explained the variance of its own indicators than the variance of other latent variables. Hence, the discriminant validity is achieved when the average variance extracted of a latent variable is higher than the squared correlations between the latent variable and all other variables (Fornell & Larcker, 1981). Meanwhile, the other method in determining discriminant validity is based on the value of the cross-loadings. Note that the loadings of an indicator on its assigned latent variable should be higher than its loading on all other latent variables.

Furthermore, the third method of validity process was conducted by examining discriminant validity through the heterotrait-monotrait (HTMT) ratio. The heterotrait–monotrait (HTMT) ratio has recently been established as a superior criterion compared to the more traditional assessment methods, such as the Fornell–Larcker criterion (Jörg Henseler, Ringle, & Sarstedt, 2015). Previous studies have suggested construct thresholds of 0.85 and 0.9 for HTMT establish discriminant validity. The results presented in the

Table 4.16 illustrated that all the values ranging from 0.85 to 0.9. Based on the results presented, it is statistically fulfilled the heterotrait-monotrait (HTMT) ratio discriminant validity criteria suggested by Jörg Henseler et al. (2015) that all the values are below than 0.90. As for this study, all requirements for discriminant validity were met successfully as it fulfilled the Fornell-Larker criterion Table 4.14, the cross-loadings guidelines Table 4.15 and heterotrait-monotrait (HTMT) ratio discriminant validity criteria showed in Table 4.16

Table 4.14

Discriminant Validity (Fornell-Larcker Criterion)

	CFS	CI	CP	FM	FP	HRM	IPP	ITI	LD	LG	PD	PM	UA
CFS	0.756												
CI	0.431	0.803											
CP	0.451	0.481	0.799										
FM	0.519	0.538	0.549	0.867									
FP	0.654	0.433	0.348	0.391	0.807								
HRM	0.629	0.430	0.444	0.462	0.588	0.817							
IPP	0.356	0.336	0.508	0.467	0.226	0.307	0.858						
ITI	0.393	0.222	0.293	0.356	0.291	0.351	0.314	0.873					
LD	0.275	0.011	0.193	0.284	0.179	0.257	0.227	0.361	0.831				
LG	0.120	0.111	0.134	0.233	0.128	0.146	0.180	0.442	0.506	0.752			
PD	0.058	0.036	0.035	0.080	0.034	0.009	0.040	0.016	-0.018	-0.030	0.761		
PM	0.416	0.228	0.435	0.487	0.316	0.307	0.297	0.361	0.254	0.299	0.021	0.808	
UA	0.046	0.090	0.047	0.085	0.048	0.048	0.061	0.007	0.018	0.052	-0.004	0.020	0.721

Table 4.15

Loadings and Cross Loadings

	CFS	CI	CP	FM	FP	HRM	IPP	ITI	LD	LG	PD	PM	UA
CFS1	**0.703**	0.280	0.248	0.267	0.507	0.464	0.213	0.267	0.104	0.004	0.080	0.303	0.016
CFS2	**0.661**	0.258	0.183	0.258	0.514	0.421	0.153	0.247	0.173	0.079	0.069	0.261	0.029
CFS3	**0.784**	0.280	0.436	0.390	0.493	0.483	0.311	0.328	0.271	0.078	0.002	0.384	-0.006
CFS4	**0.811**	0.461	0.407	0.515	0.528	0.553	0.334	0.328	0.161	0.055	0.025	0.271	0.063
CFS5	**0.806**	0.334	0.391	0.492	0.447	0.451	0.306	0.307	0.313	0.224	0.055	0.348	0.070
CI1	0.249	**0.575**	0.231	0.323	0.226	0.262	0.164	0.141	0.055	0.092	0.008	0.101	0.008
CI2	0.351	**0.836**	0.446	0.450	0.381	0.379	0.246	0.150	-0.016	0.032	0.010	0.146	0.070
CI3	0.414	**0.915**	0.463	0.467	0.397	0.422	0.318	0.197	0.000	0.081	0.036	0.225	0.074
CI4	0.352	**0.844**	0.371	0.473	0.363	0.307	0.324	0.218	0.014	0.154	0.052	0.235	0.116
CP1	0.403	0.303	**0.694**	0.403	0.320	0.419	0.392	0.304	0.134	0.129	0.058	0.343	0.013
CP2	0.342	0.378	**0.830**	0.489	0.209	0.360	0.391	0.236	0.220	0.161	0.033	0.403	0.115
CP3	0.372	0.427	**0.836**	0.433	0.280	0.352	0.426	0.216	0.168	0.117	0.011	0.386	0.023
CP4	0.372	0.380	**0.825**	0.439	0.335	0.351	0.404	0.252	0.167	0.075	-0.004	0.358	-0.013
CP5	0.312	0.429	**0.800**	0.425	0.247	0.293	0.416	0.163	0.075	0.051	0.046	0.239	0.050
FM1	0.449	0.404	0.433	**0.863**	0.308	0.370	0.402	0.352	0.311	0.262	0.048	0.493	0.094
FM3	0.430	0.446	0.458	**0.849**	0.313	0.409	0.421	0.284	0.205	0.146	0.081	0.342	0.075
FM4	0.471	0.550	0.538	**0.887**	0.397	0.424	0.394	0.288	0.216	0.194	0.080	0.424	0.051
FP1	0.459	0.349	0.299	0.276	**0.852**	0.421	0.157	0.204	0.116	0.097	0.019	0.283	-0.026
FP2	0.488	0.409	0.272	0.344	**0.846**	0.471	0.177	0.224	0.167	0.121	-0.006	0.223	0.062
FP3	0.561	0.324	0.232	0.358	**0.842**	0.515	0.179	0.182	0.135	0.125	0.074	0.207	0.063
FP4	0.609	0.312	0.319	0.284	**0.676**	0.489	0.218	0.332	0.161	0.068	0.023	0.305	0.058
HRM1	0.471	0.288	0.363	0.367	0.419	**0.816**	0.284	0.317	0.274	0.178	-0.019	0.269	-0.022
HRM2	0.550	0.407	0.353	0.417	0.411	**0.865**	0.256	0.313	0.251	0.173	-0.005	0.275	0.020
HRM3	0.556	0.383	0.386	0.385	0.593	**0.831**	0.260	0.285	0.196	0.093	0.009	0.250	0.115
HRM4	0.479	0.327	0.354	0.338	0.518	**0.754**	0.198	0.221	0.098	0.011	0.055	0.200	0.050

Table 4.15 (Continue)

	CFS	CI	CP	FM	FP	HRM	IPP	ITI	LD	LG	PD	PM	UA
IPP1	0.222	0.183	0.399	0.368	0.091	0.276	**0.821**	0.300	0.252	0.219	0.054	0.191	0.043
IPP3	0.396	0.388	0.482	0.388	0.283	0.302	**0.889**	0.287	0.159	0.128	0.001	0.264	0.062
IPP4	0.285	0.280	0.421	0.449	0.193	0.211	**0.863**	0.223	0.181	0.122	0.052	0.307	0.052
ITI1	0.292	0.130	0.231	0.270	0.227	0.277	0.275	**0.839**	0.249	0.374	0.039	0.267	0.003
ITI2	0.380	0.193	0.240	0.341	0.257	0.321	0.265	**0.884**	0.319	0.383	-0.011	0.351	-0.010
ITI4	0.361	0.182	0.255	0.305	0.250	0.315	0.280	**0.891**	0.376	0.389	0.023	0.341	-0.014
ITI5	0.336	0.264	0.295	0.326	0.281	0.310	0.279	**0.879**	0.312	0.398	0.009	0.297	0.045
LD1	0.218	0.014	0.119	0.231	0.210	0.255	0.108	0.286	**0.808**	0.456	-0.015	0.157	0.000
LD2	0.268	-0.040	0.206	0.222	0.128	0.182	0.272	0.316	**0.817**	0.437	-0.028	0.284	-0.014
LD3	0.228	0.069	0.220	0.259	0.168	0.246	0.215	0.335	**0.862**	0.391	-0.009	0.215	0.020
LD4	0.201	-0.012	0.087	0.228	0.083	0.165	0.158	0.260	**0.837**	0.402	-0.009	0.188	0.056
LG1	0.046	0.035	0.118	0.158	0.050	0.027	0.130	0.348	0.387	**0.769**	0.027	0.211	0.053
LG2	0.124	-0.003	0.108	0.202	0.103	0.096	0.125	0.401	0.491	**0.797**	-0.058	0.269	0.051
LG3	0.177	0.116	0.098	0.188	0.195	0.162	0.137	0.367	0.386	**0.729**	-0.046	0.297	0.023
LG4	0.065	0.172	0.072	0.185	0.140	0.160	0.103	0.266	0.310	**0.727**	-0.001	0.123	0.023
LG5	0.075	0.177	0.149	0.212	0.101	0.136	0.152	0.342	0.306	**0.740**	-0.044	0.192	0.062
LG6	0.038	-0.012	0.044	0.089	-0.041	0.068	0.165	0.243	0.405	**0.745**	-0.003	0.251	0.015
PD1	0.035	0.035	0.041	0.055	0.004	0.007	0.026	0.026	-0.019	0.002	**0.892**	0.024	0.009
PD2	0.081	0.015	0.015	0.074	0.049	-0.002	0.032	0.017	-0.019	-0.033	**0.785**	0.023	0.013
PD4	0.011	0.035	0.017	0.069	0.044	0.026	0.045	-0.027	0.006	-0.071	**0.570**	-0.010	-0.065
PM1	0.262	0.067	0.256	0.293	0.140	0.191	0.171	0.293	0.239	0.244	-0.029	**0.725**	0.037
PM2	0.364	0.241	0.336	0.436	0.330	0.302	0.262	0.270	0.187	0.197	0.019	**0.824**	-0.002
PM3	0.297	0.097	0.336	0.322	0.230	0.213	0.245	0.254	0.199	0.250	0.068	**0.792**	-0.002
PM4	0.348	0.227	0.334	0.433	0.304	0.262	0.212	0.339	0.161	0.263	0.050	**0.855**	0.020
PM5	0.341	0.235	0.376	0.393	0.286	0.225	0.240	0.333	0.245	0.318	-0.049	**0.857**	0.015
PM6	0.390	0.203	0.455	0.456	0.213	0.281	0.300	0.259	0.210	0.178	0.042	**0.784**	0.032

Table 4.15 (Continue)

	CFS	CI	CP	FM	FP	HRM	IPP	ITI	LD	LG	PD	PM	UA
UA1	0.044	0.053	0.067	0.058	0.041	0.030	0.046	0.023	0.005	0.051	0.003	0.057	**0.861**
UA2	0.050	0.070	0.035	0.059	0.031	0.060	0.043	0.010	0.040	0.039	-0.061	0.022	**0.764**
UA3	0.025	0.035	-0.024	0.077	0.080	0.044	0.055	0.000	0.000	0.017	0.086	-0.051	**0.583**
UA4	-0.006	0.145	0.021	0.076	-0.023	0.001	0.041	-0.048	0.003	0.034	-0.022	-0.032	**0.644**

Table 4.16

Discriminant Validity (HTMT Criterion)

	CFS	CI	CP	FM	FP	HP	HRM	IPP	ITI	LD	LG	PD	PM	UA
CFS														
CI	0.524													
CP	0.530	0.570												
FM	0.619	0.655	0.650											
FP	0.814	0.528	0.418	0.475										
HP	0.693	0.608	0.873	0.715	0.740									
HRM	0.765	0.522	0.528	0.553	0.722	0.650								
IPP	0.422	0.399	0.605	0.566	0.270	0.778	0.368							
ITI	0.458	0.258	0.335	0.410	0.342	0.593	0.401	0.367						
LD	0.326	0.076	0.222	0.334	0.214	0.524	0.295	0.275	0.410					
LG	0.175	0.174	0.161	0.270	0.172	0.748	0.181	0.219	0.501	0.598				
PD	0.099	0.067	0.066	0.118	0.074	0.113	0.050	0.069	0.051	0.039	0.088			
PM	0.485	0.253	0.493	0.556	0.365	0.587	0.350	0.344	0.402	0.294	0.344	0.081		
UA	0.082	0.143	0.090	0.120	0.104	0.132	0.092	0.082	0.050	0.058	0.078	0.117	0.084	

4.13 Establishing hierarchical component models (HCMs)

In the field of social sciences, PLS allow researchers to examine models at high level of abstraction. To become model more parsimonious Hierarchical component models or higher order models enable researchers to reduce number of relationships in the model structure (Becker, Klein, & Wetzels, 2012; Ciavolino & Nitti, 2010). In this study Infrastructure TQM and Core TQM were conceptualized as second-order constructs with reflective indicators. The second-order constructs were assessed using the repeated indicator approach in which all the first-order constructs were taken together as a reflective measure of second-order constructs. That is, the second-order constructs were measured directly by all indicators of the first-order constructs (Becker et al., 2012; Wetzels, Odekerken-Schröder, & Van Oppen, 2009).

In this study, infrastructure TQM was conceptualized as a second-order constructs which consisted of four first-order constructs. Table 4.17 illustrates that all first-order constructs for ITQM, namely, leadership, human resource management, financial management and IT infrastructure with reflective indicators were modeled to the second-order constructs with the four of first-order constructs as reflective indicators. This model is called reflective-reflective type 1 (Becker et al., 2012). Moreover, these four first-order constructs were explained well by the second-order of ITQM, as indicated by *R* squares of 0.397, 0.545, 0.570 and 0.524 (see Table 4.17). All path coefficients from ITQM to its dimensions were significant at $p < 0.01$ (see Table 4.17). Accordingly, all four dimensions of ITQM were measured to a second-order construct procedure (Wetzels et al., 2009).

Moreover, this study conceptualized core TQM as a second-order reflective construct with three first-order reflective constructs. They were customer focus and satisfaction, process management and continuous improvement. Table 4.17 illustrates that all first-order constructs for CTQM with reflective indicators were modeled to the second-order constructs with the three of first-order constructs as reflective indicators. Moreover, Table 4.17 demonstrates that correlations between all three dimensions of core TQM were high in the first-order constructs, which indicated the presence of a second-order construct (Byrne, 2016). The three first-order constructs were also explained well by the second-order of CTQM, as indicated by R square values of 0.660, 0.632 and 0.414 (see Table 4.17). All path coefficients from CTQM to its dimensions were significant at $p < 0.01$ (see Table 4.17. Accordingly, all three dimensions of CTQM were measured to a second-order construct procedure (Wetzels et al., 2009). The validity of ITQM and CTQM as second-order constructs is shown in Table 4.13, which indicates that the AVE and CR of ITQM were 0.509 and 0.805 and CTQM were 0.569 and 0.797, respectively. All values were well above the cut off values.

Organizational performance (OP) was conceptualized as second-order formative constructs with first-order reflective constructs. Such model is called reflective-formative type II model (Becker et al., 2012; Chin, 2010). Organizational performance was also conceptualized as a second-order formative construct with four first-order reflective constructs. They customer perspective (CP), internal process perspective (IPP), financial perspective (FP) and learning and growth (LG) (Mohammed & Taib, 2016). Table 4.17 illustrates that all first order constructs for OP with reflective indicators were modeled to

the second-order constructs with the four of first-order constructs as formative constructs. All path coefficients from the dimension of OP to OP were significant at $p < 0.01$ (see Table 4.17). Therefore, the second order constructs of OP was directly measured by all indicators of first-order constructs (Wetzels et al., 2009). The weight values recorded for OP as a second order construct were 0.524 (CP), 0.306 (IPP), 0.310 (FP) and 0.328 (LG) were significant at $p < 0.01$. Moreover, the values of VIF for the four constructs of OP were less than 10, as shown in Table 4.4. These values were below suggested threshold. Results demonstrated the goodness of measure for second-order formative construct.

Table 4.17
Second Order of ITQM, CTQM and OP and its relationship with first order constructs

Second Order Construct	**First Order Construct**	**R^2**	**Beta**	**t-value**
Infrastructure TQM				
	Leadership	0.397	0.630	P<0.01
	HRM	0.545	0.739	P<0.01
	Financial Management	0.524	0.724	P<0.01
	IT infrastructure	0.570	0.755	P<0.01
Core TQM	Customer Focus Satisfaction	0.660	0.812	P<0.01
	Process Management	0.632	0.795	P<0.01
	Continuous Improvement	0.414	0.644	P<0.01
		R^2	**Weight**	**t-value**
Organizational Performance		1.000		
	Customer Perspective		0.524	P<0.01
	Internal Process Perspective		0.306	P<0.01
	Financial Perspective		0.310	P<0.01
	Learning & Growth		0.328	P<0.01

4.14 Assessment of structural Model

In fact, the nature of effects between exogenous and endogenous differs for models with and without moderation effect (Joseph F Hair et al., 2014). Since one of the objectives of

this study is to test the significance of the main effects between all exogenous and endogenous constructs, the PLS analysis should be initially executed without the moderator, and then the interaction effects can be safely tested in another model (Joseph F Hair et al., 2014). Therefore, this study executes two models: the main effects model and the moderation effects model separately.

4.15 Main effect model

Typically, there are four criteria to assess the structure model including coefficient of determination (R^2), path coefficient (β), and effect size (f^2)and Prediction relevance (Q^2) (Hair Jr et al., 2016; Jorg Henseler et al., 2014; Jörg Henseler et al., 2009).

4.16 Assessment of Coefficient of Determination (R^2 value)

The coefficient of determination R^2 was assessed in this study for the primary and secondary endogenous latent variables as recommended by some researchers (Hair Jr et al., 2016). According to Cohen (1992), as a rule of thumb, R^2 values of 0.26, 0.13, or 0.02 for endogenous latent constructs can be described as substantial, moderate and weak respectively. Table 4.18 indicates that exogenous construct such as Infrastructure TQM contributed 47.9% of the variance in Core TQM. Furthermore, R^2 of organizational performance was substantial with a value of 0.562. This means that Core TQM explained 56.2% of the variance in organizational performance. According to Jörg Henseler et al. (2009) the R^2 of endogenous variables with three or more exogenous latent variables should be at least substantial, which was met in this study.

Table 4.18
Coefficient of Determination R^2

Construct	R^2	Result
Core TQM	0.479	Substantial
Organizational Performance	0.562	Substantial

4.17 Hypotheses Testing

In this section of the report, the structural model and the result of the test of hypotheses are presented. The main concern of this section tends towards the testing of the hypotheses related to both the main and the moderating effects. In achieving this, PLS path modeling multiple regression approach was used to test the main effects, mediating and the moderating effects were tested using the bootstrapping technique in PLS. The path modeling in this study was conducted using PLS bootstrapping techniques (W. Chin, Marcolin, & Newsted, 1996), using 378 cases and 5000 bootstrapped samples in testing the hypotheses of the current study. The 5000 bootstrapped samples were used to ensure that all the model parameter has empirical sampling distribution and standard error was obtained. By using the same method stated above, the path coefficients were estimated using t-statistics. The significance level of the t-value was assessed by a one-tailed distribution (W. Chin et al., 1996). In a situation where a one-tailed statistical test is conducted, the significance level of t-value of 1% is greater than or equal to 2.326, at 5% is greater or equal to 1.645 while at 10% is greater or equal to 1.282, any t-value lesser than the stated are regarded as not significant (Churchill Jr, 1979).

Hypothesis 1: Infrastructure TQM is positively related to Core TQM.

Result from the output of the algorithm and bootstrapping PLS-SEM showed a positive and significant association between infrastructure TQM and Core TQM ($\beta = 0.692$, $t = 18.797$, $p < 0.01$) as showed in Table 4.19. Therefore, Hypothesis 1 is supported.

Hypothesis 2: Core TQM is positively related to organizational performance.

The path coefficient from Core TQM to organizational performance was positive and significant ($\beta = 0.748$, $t = 25.969$, $p < 0.01$) as mentioned in Table 4.19, Figure 4.2 and Figure 4.3, Hypothesis 2 received empirical support.

Table 4.19

Results of Path Coefficients (Direct Relationship)

No	Relationship	Beta	SE	t-value	Decision
H1	ITQM -> CTQM	0.692	0.037	18.797**	Supported
H2	CTQM -> OP	0.748	0.028	25.969**	Supported

Note: *p<0.05 (t > 1.645); ** p < 0.01 (t > 2.33)

Infrastructure Total Quality Management; ITQM – Core Total Quality Management; CTQM – Organizational Performance; OP

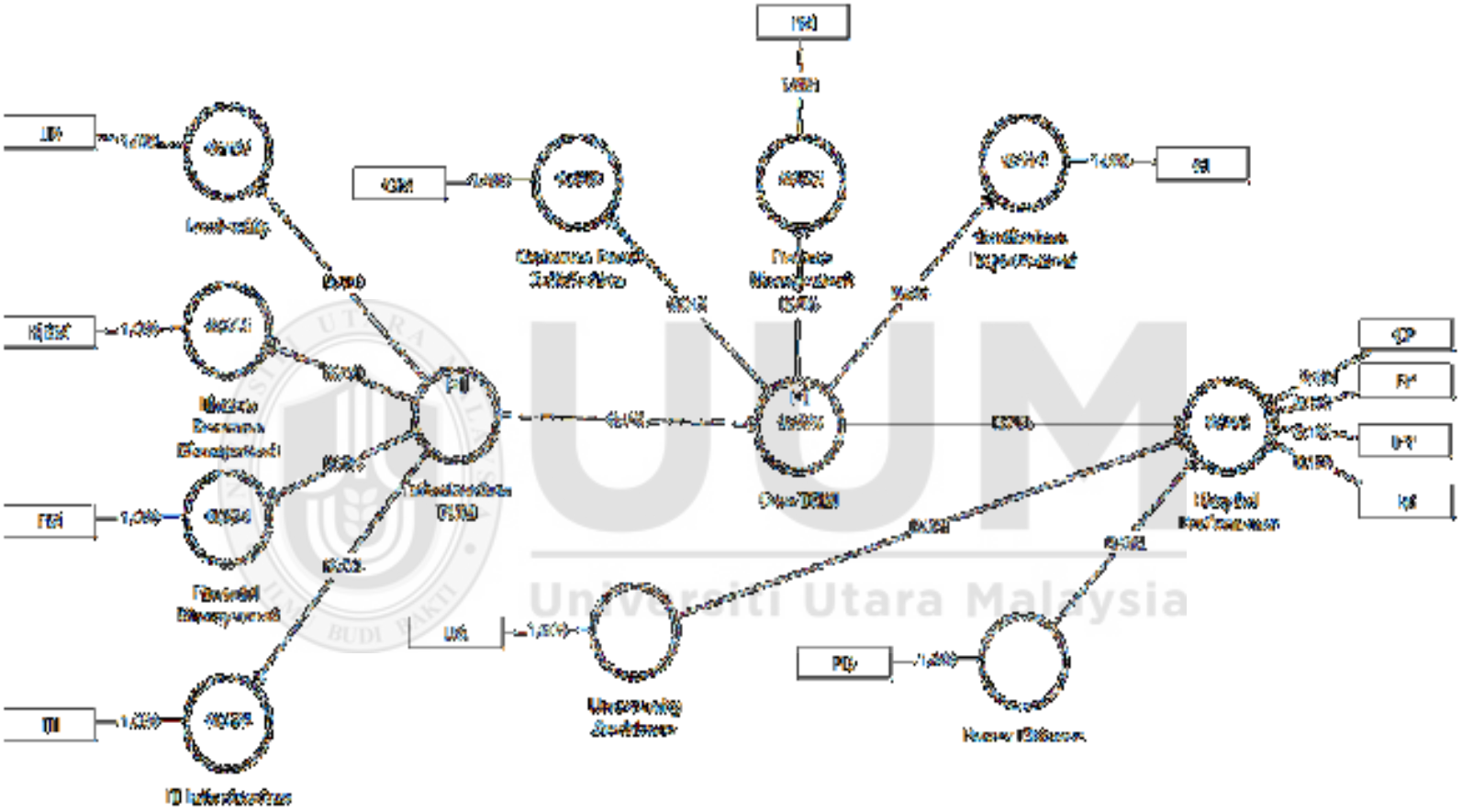

Figure 4.2

Two-stage approach: Direct Path Coefficient of the Structural Model (PLS Algorithm)

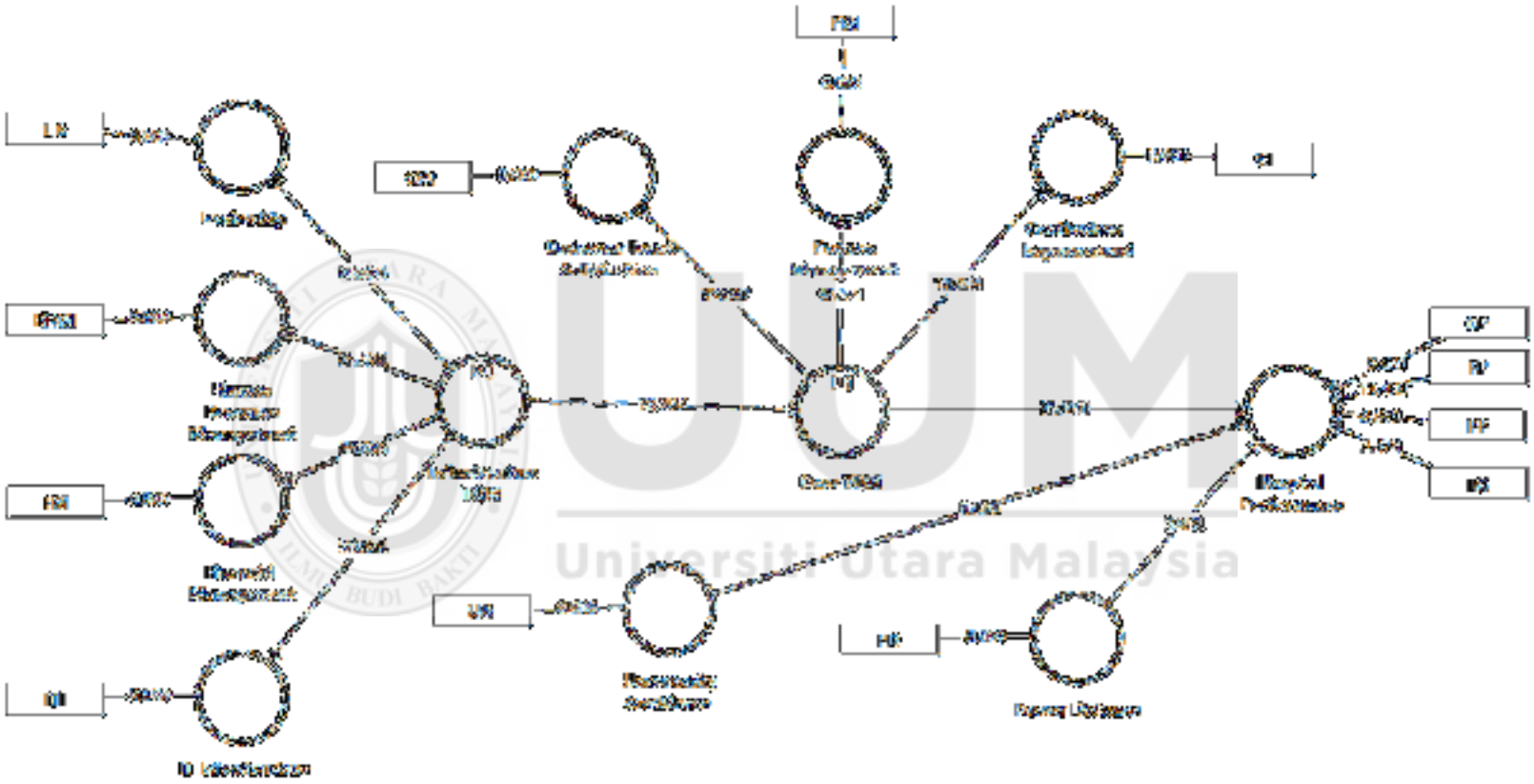

Figure 4.3

Two-Stage Approach: Direct Path Coefficient of Structural Model (Bootstrapping)

4.17.1 Testing the Mediating effect

Hypothesis 3: Core TQM mediates the relationship between infrastructure TQM and organizational performance.

As shown in Table 4.20, the bootstrapping analysis showed that the indirect effect (β = 0.517) was significant with t-value of 12.499. Also as indicated by Preacher and Hayes (2008), the indirect effect 95% Boot CI: [LL = 0.451, UL = 0.586], did not straddle a 0 in between, indicating there is mediation. Thus, the result revealed that the mediation effect of core TQM on the relationship between infrastructure TQM and organizational performance was statistically significant (β = 0.517, t =12.499, p < 0.01). For that reason, Hypothesis 3 was supported.

Table 4.20
Results of Path Coefficient (Mediation Results)

					Confidence interval		
No	**Relationship**	**Beta**	**SE**	**t-value**	**LL**	**UL**	**Decision**
H3	ITQM->CTQM->OP	0.517	0.041	12.499**	0.451	0.586	Supported

Note: *p<0.05 (t > 1.645); ** p < 0.01 (t > 2.33)

Infrastructure Total Quality Management; ITQM – Core Total Quality Management; CTQM – Organizational Performance; OP

4.17.2 Testing the moderation effect

Hypothesis 4: Uncertainty avoidance moderates the relationship between core TQM and organizational performance.

This study employed the two-stage approach to examining the moderating effect of uncertainty avoidance on the relationship between core TQM and organizational

performance. Figure 4.4 and Figure 4.5 illustrate the moderating effect test for the model. In Table 4.21 and Figure 4.5, Hypothesis 4 showed that the t-value 1.034 was lower than the cutoff value of 1.645, indicating that the result was not statistically significant. Thus, the result showed no credible evidence of the moderating effect of uncertainty avoidance on the relationship between core TQM and organizational performance (β = - 0.039, t = 1.034, p > 0.05). Hence, H4 was rejected and no conclusion can be drawn.

Hypothesis 5: Power distance moderates the relationship between Core TQM and organizational performance.

Furthermore, to test research hypothesis this study employed the two-stage approach to examining the moderating effect of power distance on the relationship between core TQM and organizational performance. Figure 4.4 and Figure 4.5 illustrate the moderating effect test for the model. In Table 4.21 and Figure 4.5, Hypothesis 5 showed that the t-value 0.125 was lower than the cutoff value of 1.645, indicating that the result was not statistically significant. Thus, the result showed no credible evidence of the moderating effect of power distance on the relationship between core TQM and organizational performance (β = 0.006, t = 0.125, p > 0.05). Hence, H5 was rejected and no conclusion can be drawn.

Table 4.21
Results of Path Coefficients (Moderating Results)

No	Relationship	Beta	SE	t-value	Decision
H4	CTQM * UA ->OP	-0.039	0.038	1.034	Not Supported
H5	CTQM * PD ->OP	0.006	0.045	0.125	Not Supported

Note: *p<0.05 (t =1.645)

Core Total Quality Management; CTQM – Organizational Performance; OP – Uncertainty avoidance; UA – Power distance; PD

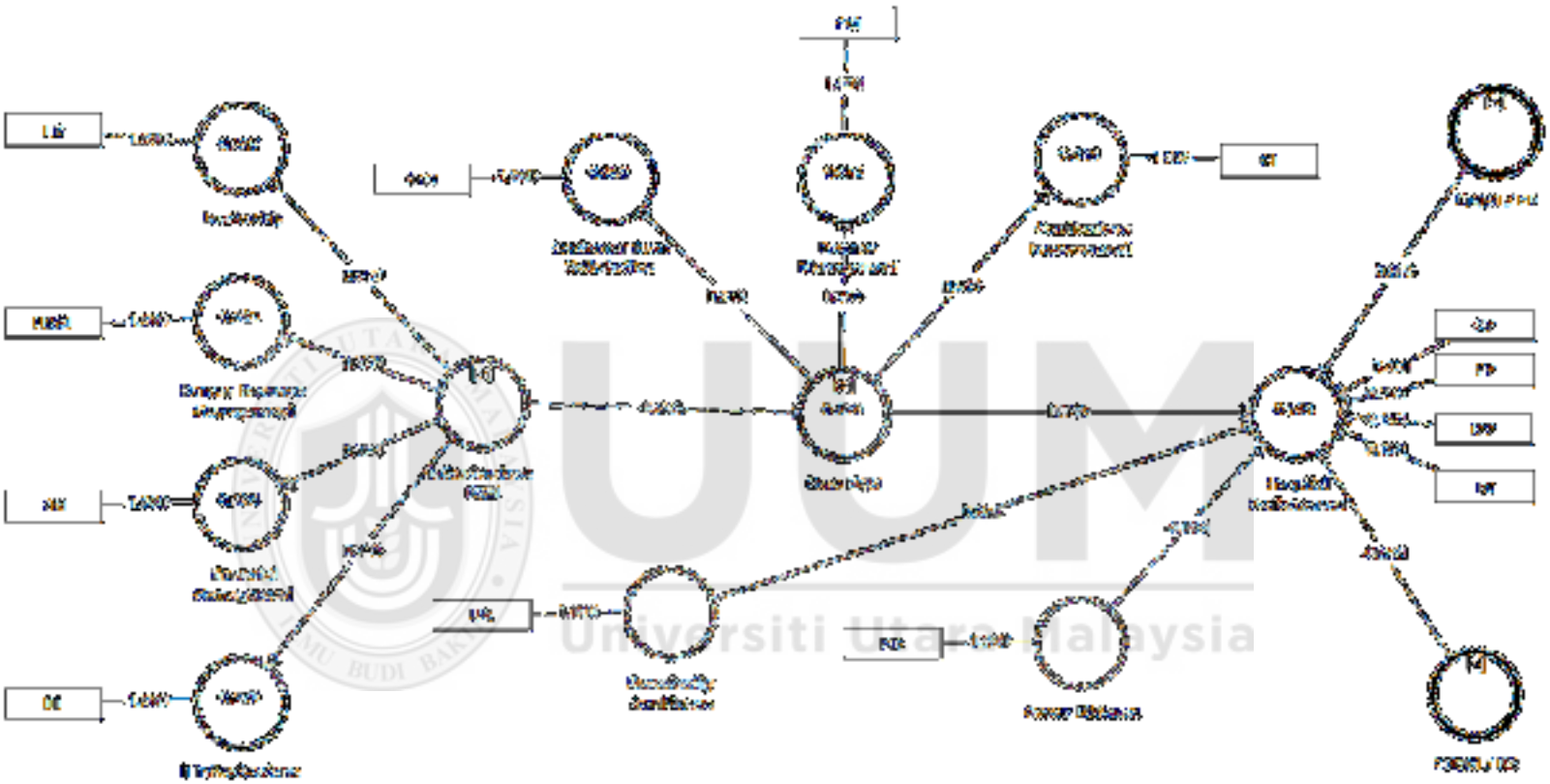

Figure 4.4

Two-stage Approach: Moderating Effects Model (PLS Algorithm)

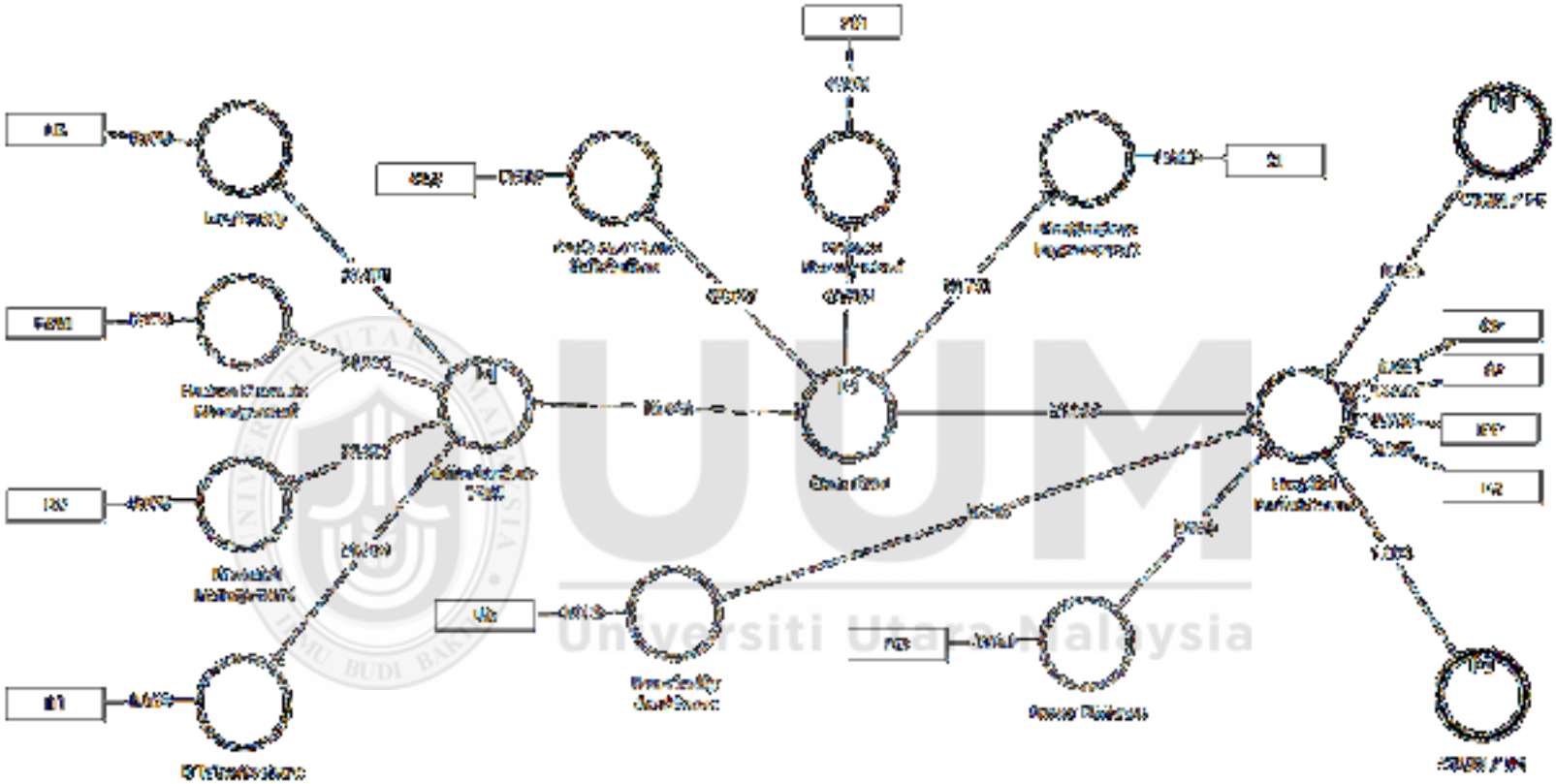

Figure 4.5

Two-stage Approach: Moderating Effects Model (Bootstrapping)

4.18 Effect Size (f^2)

According to Cohen (1988) the f-squared values of 0.02, 0.15, and 0.35 can be described as weak, moderate and strong effects respectively. The f^2 effect size which is a measure of the impact of a specific exogenous construct on the endogenous construct was examined and the effect sizes of leadership, human resource management, financial management, IT infrastructure, customer focus and satisfaction, continuous improvement, process management are found to be large while the effect size of power distance has no effect and uncertainty avoidance has small effect size as shown in the table 4.22 given below.

Table 4.22

Values of Effect Size (f2)

Construct	Effect size	Remarks
Leadership	0.659	Large
Human resource management	1.200	Large
Financial management	1.101	Large
IT infrastructure	1.326	Large
Customer focus & satisfaction	1.940	Large
Continuous improvement	0.707	Large
Process management	1.719	Large
Power distance	0.000	None
Uncertainty avoidance	0.000	None

4.19 Predictive Relevance of the Model (Q^2 value)

Predictive relevance is a measure used to assess the relative predictive relevance of a predictor construct on an endogenous construct. It helps to determine the relevance of the reflective construct in a structural equation modeling (SEM) model. In this study, Q2 was calculated in Smart PLS 3 using blindfolding procedure. Cross validated redundancy approach was used in this study to determine the predictive relevancy of the constructs.

This is because, according to Hair et al. (2014), cross validated redundancy approach includes the elements of structural model, path model and predicted eliminated data in its assessment. In Table 4.23, the predictive relevance is shown in the column labelled 1-SSE/SSO which means squared prediction error/squared observations. Any value in the column that is more than 0 are said to have predictive relevance. The result shows that the Q2 value for all the three endogenous variables are above zero and therefore, the model is adjudging to have predictive relevance (Jörg Henseler et al., 2009).

Table 4.23

Constructs Cross-validated Redundancy

Total	**SSO**	**SSE**	**Q^2(=1-SEE/SSO)**
Core TQM	5,670.000	4,753.333	0.162
Organizational Performance	6,804.000	5,006.441	0.264

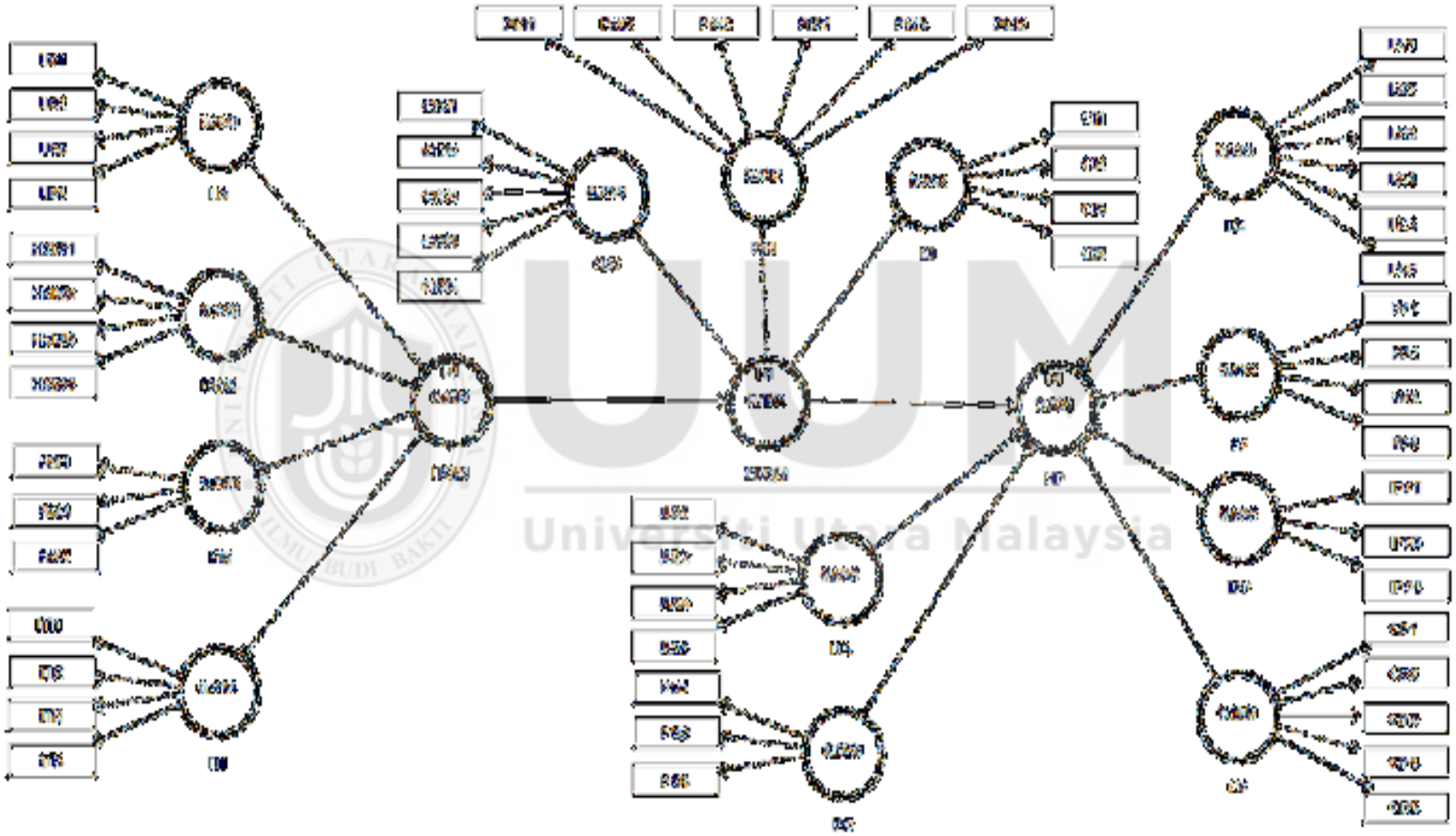

Figure 4.6 The *Predictive Relevance of the Endogenous Latent Constructs (Q^2)*

4.20 Summary of the findings

Three hypotheses out of the five hypotheses support the formulated hypotheses as depicted in Table 4.24.

Table 4.24
Summary of Hypotheses Results

H	Descriptions	Results
	Results of Direct Relationship	
H1	Infrastructure TQM is positively related to Core TQM.	Supported
H2	Core TQM is positively related to organizational performance	Supported
	Results of Mediation Effect	
H3	Core TQM mediates the relationship between infrastructure TQM and organizational performance.	Supported
	Results of Moderation Effect	
H4	Uncertainty avoidance moderates the relationship between core TQM and organizational performance.	Not Supported
H5	Power distance moderates the relationship between Core TQM and organizational performance.	Not Supported

4.20 Summary

The data analysis and the result of the study is discussed in this chapter. Moreover, the data were provided regarding the general characteristics of the sample and descriptive statistics of the respondents. The measurement model and the structural model are also assessed. PLS-SEM is used for the hypothesis testing, three out of five hypothesis are supported in this study.

CHAPTER FIVE

DISCUSSION AND CONCLUSION

5.1 Introduction

This chapter is devoted to summarize the study, discuss about the research findings and recommendations. In addition, it also highlights the theoretical and practical implications that can help the decision makers. This chapter, however, report the limitations and future research based on faced limitations. Finally, the chapter concludes the study.

5.2 Summary of the study

Total quality management (TQM) has been acknowledged as significant tool that resulted in improvement of organizational performance since last two decades. From the recent literature, an inconclusive result among the relationship of TQM and the organizational performance was the motivation of the current study. The foremost objective of the study was to investigate the impact of TQM practices (core TQM and infrastructural TQM) on the organizational performance. This current study also investigated the mediating role of core TQM as well as the moderating role of national culture (power distance/uncertainty avoidance).

Based on the problem statement in chapter 1 and comprehensive literature review in chapter 2, this study aimed to achieve the following objectives. First objective is to determine whether the infrastructural TQM affect core TQM. Second and third objective were to determine whether the core TQM affect the organizational performance and to

determine the core TQM mediates the relationship among the infrastructural TQM and organizational performance respectively**.** Finally, the fourth objective were that (H4a) power distance moderates the relationship among the core TQM and the organizational performance and (H4b) uncertainty avoidance moderates the relationship among the core TQM and the organizational performance respectively.

Objective 1: To determine whether the infrastructural TQM affect core TQM.

H1: Infrastructural TQM significantly and positively affects the core TQM.

Infrastructure TQM also known as soft, organic or supportive TQM generally directs the quality management. Infrastructure TQM was the strong predictor of core TQM and the organizational performance (Calvo-Mora, Picón et al. 2013, Calvo de Mora Schmidt, Picón Berjoyo et al. 2013). Infrastructure TQM practices relates to organizational aspects of TQM, long term changes, organizational development techniques (Prajogo and McDermott 2005, Thai Hoang, Igel et al. 2006, Bou-Llusar, Escrig-Tena et al. 2009, Fotopoulos and Psomas 2009, Zu, Robbins et al. 2010, Kanapathy, Bin et al. 2017). High-performing firms focus more on soft elements of TQM (Wisner, Tan et al. 2014).

In the literature of TQM there is lack of consensus on soft TQM elements (Calvo de Mora Schmidt, Picón Berjoyo et al. 2013). The infrastructure TQM elements contribute to organization performance by supporting the core TQM (Saleh, Sweis et al. 2018). This study examined the effect of infrastructure TQM practices on core TQM practices, considering infrastructure TQM practices as independent and core TQM practices as dependent ones. There is no uniform definition of infrastructure TQM by today (Keng Boon, Arumugam et al. 2005, Boon Ooi, Abu Bakar et al. 2007). TQM practices have

interdependence in nature and the integrated approach (infrastructure TQM/core TQM) is the most effective tool to implement the TQM (Flynn, Schroeder et al. 1995, Kaynak 2003, Prajogo and McDermott 2005, Zu 2009, Fallah Ebrahimi, Wei Chong et al. 2014).

According to (Fallah Ebrahimi, Wei Chong et al. 2014), TQM is categorized into various practices such as management-related practices, planning-related practices, customer-related practices, process-related practices, supplier-related practices, information-related practices, human resource-related practices, design & development-related practices, benchmarking-related practices, measurement-related practices, tool and technique-related practices, culture-related practices, resource-related practices and other practices. In the current study, the integration above mentioned practices were taken into consideration i.e. management related practices (leadership), resource related practices (financial management), information related practices (IT infrastructure) and human resource related practices (human resource management) (Fallah Ebrahimi, Wei Chong et al. 2014, Khalili, Ismail et al. 2018).

This study has projected the positive relationship (Beta=0.692, t=18.797, p<0.01) among the infrastructural TQM and the core TQM which also supported with following empirical supports (Ho, Duffy et al. 1999, Ho, Duffy et al. 2001, Chin, Pun et al. 2002, Kaynak 2003, Prajogo and Sohal 2004, Rahman and Bullock 2005, Flynn and Saladin 2006, Fotopoulos and Psomas 2009, García 2011, Abdullah and Tari 2012, Al-Khalili and Subari 2013, Calvo de Mora Schmidt, Picón Berjoyo et al. 2013, Sisnuhadi 2014). The findings of the current study are related to the previous empirical studies in the

service sector (Feng, Prajogo et al. 2006, Gadenne and Sharma 2009, Zu 2009, Al-Khalili and Subari 2013, Calvo de Mora Schmidt, Picón Berjoyo et al. 2013).

In Indonesia, (Sisnuhadi 2014) conducted a research to find out the connection between infrastructure TQM, core TQM factors and organizational learning. After examining validity and reliability, analysis was run and found that higher level of core TQM factor was influenced by infrastructure TQM factors and then effect the organizational learning. It also clarify the infrastructure TQM significantly affects the core TQM. In Malaysia, to find direct and indirect effect of infrastructure and core TQM practices on organization performance (Abdullah and Tari 2012) targeted electrical and electronics manufacturing companies. The research aim to find the relationships between infrastructure TQM, core TQM practices and performance. The results indicated that infrastructure TQM has direct positive association with core TQM.

Furthermore, Ratny, Arshad et al. (2018) investigated the relationship of infrastructure TQM on the core TQM. Empirically, the data was collected form 190 service companies of Pakistan. The findings of the study revealed that infrastructure TQM components have significant and direct linked with the core TQM practices. Additionally, in another pervious study the impact of infrastructure TQM on the core TQM was investigated. The findings of the study was evident that the infrastructure TQM significantly affect the core TQM (Modgil and Sharma 2017).

Objective 2: To determine whether the core TQM affect the organizational performance

H2: Core TQM significantly and positively affects the organizational performance

Core TQM also recognized as hard and mechanistic TQM. Core TQM precisely contribute to the organizational performance (Calvo de Mora Schmidt, Picón Berjoyo et al. 2013). Core TQM practices include practical, numeric, systematic problem solving methods, effective production and operational performance (Dubey and Gunasekaran 2015, Arunachalam and Palanichamy 2017, Khalili, Ismail et al. 2017). Additionally, core TQM factors like processes management, continuous improvement and customer focus and satisfaction have connection with organizational performance (Gadenne and Sharma 2009, Irfan and Ijaz 2011, Zairi and Alsughayir 2011, Calvo de Mora Schmidt, Picón Berjoyo et al. 2013). Yunis, Jung et al. (2013) stated that there is a lack of substantive research to examine the different factors of core TQM practices in the prior studies and need to integrate various other core TQM factors.

In this study, the integrated TQM practices were used from several quality practices i.e. management-related practices, planning-related practices, customer-related practices, process-related practices, supplier-related practices, information-related practices, human resource-related practices, design & development-related practices, benchmarking-related practices, measurement-related practices, tool and technique-related practices, culture-related practices, resource-related practices and other practices to investigate the

relationship of core TQM and the organizational performance (Fallah Ebrahimi, Wei Chong et al. 2014). Therefore, process management, customer focus and satisfaction continuous improvement was investigated the effect of core TQM practices on the organizational performance in the current study. The result of the study also supports the hypothesis H2 (Beta=0.748, t=25.969, $p<0.01$) and have a positive and significant relationship with organizational performance. The positive and significant association of core TQM practices and the organizational performance is congruent with the prior studies (Feng, Prajogo et al. 2006, Gadenne and Sharma 2009, Zu 2009, Al-Khalili and Subari 2013, Calvo de Mora Schmidt, Picón Berjoyo et al. 2013, Sisnuhadi 2014).

Yazdani, Attafar et al. (2016) conducted the research in Iran and found that the core TQM practices proposed by the prior researcher Flynn et al. 1995 and supported by (Ho, Duffy et al. 2001, Sousa and Voss 2002, Rahman and Bullock 2005) significantly and positively affect the organizational performance. Furthermore, Khan (2016) examined the relationship of quality practices with the organizational performance in the service sector telecommunication operators of Pakistan. Data was collected from the employees of the telecommunication operators. The findings revealed that the core TQM practices significantly and positively affect the organizational performance.

Objective 3: **To determine the core TQM mediates the relationship among the infrastructural TQM and organizational performance.**

H3: Core TQM mediates the relationship among the infrastructural TQM and organizational performance.

The effect of core TQM as a mediator between the relationship of infrastructure TQM and the organizational performance was examined in this study. Infrastructure TQM had no direct link to the organizational performance. Therefore, the results demonstrated that the mediation effect of core TQM on the relationship between the infrastructure TQM and the organizational performance was significant ($\beta = 0.517$, $t = 12.499$, $p < 0.01$). Consequently, the result supported the above mentioned hypothesis (H3). The findings of the prior studies also supported the significant mediating role of core TQM (Ho, Duffy et al. 2001, Rahman and Bullock 2005, Abdallah 2013, Bhat 2016).

In Malaysia, to find direct and indirect effect of infrastructural and core TQM practices on organization performance Abdullah & Tari (2012) targeted electrical and electronics manufacturing companies. The research aims to find the relationships between infrastructural, core TQM practices and organization performance. For this purpose, data is collected from 255 respondents and uses structural equation modeling as statistical tool to find relationships. The results indicated that infrastructure TQM has indirect positive relation and core TQM worked as a mediator.

The proposition has received support from several empirical studies alike (Khan and Naeem 2018), the main aim was to investigate the indirect relationship between the infrastructure TQM and the performance of the organization. By collecting data from 318 respondents from the metropolitan cities of Pakistan, the hard TQM positively mediate the impact of the infrastructural TQM practices and the organizational performance. The study also indicated that the adoption of the core TQM practices as mediator enhances the organizational performance and the relationship of infrastructural TQM and the organizational performance. In addition, the prior study of (Calvo de Mora Schmidt, Picón Berjoyo et al. 2013) also found that the infrastructure TQM practices have indirect link with organizational performance with the incorporation of the hard TQM.

Objective 4: **To determine the national culture (power distance and uncertainty avoidance) moderates the relationship of core TQM and the organizational performance.**

H4a: Power distance moderates the relationship among the core TQM and the organizational performance.

H4b: Uncertainty avoidance moderates the relationship among the core TQM and the organizational performance.

In this study, national culture (power distance & uncertainty avoidance) was investigated as moderator among the relationship between core TQM and the organizational

performance. Contrary to expectation, there was no moderation affect among the relationship in the current study and result contradicted the findings of past researchers.

Power distance reflects “the extent to which the less powerful members of organizations and institutions accept and expect that power is distributed unequally” (Hofstede 2010). Uncertainty avoidance reflects “intolerance for uncertain or unknown situations”. It is also defined as “Individuals socialized in different national cultures have different levels of tolerance for uncertainty and ambiguity, which is referred to as uncertainty avoidance”(Hofstede 2001). According to (Steenkamp, Hofstede et al. 1999), power distance and uncertainty avoidance are the most pragmatic dimensions for the management related literature. Tata and Prasad (1998) founded that power distance and uncertainty avoidance were the most dominant cultural dimensions of hofstede in TQM context. In concurrence with (Tata and Prasad 1998), it was revealed by (Mathews, Ueno et al. 2001) that these two dimensions (power distance and uncertainty avoidance) appeared predominantly influential for the explanation of national culture in TQM environment.

Tata and Prasad (1998) indicated that organizations with high power distance and high uncertainty avoidance represent mechanistic organization structure or bureaucratic organizational structure which has rigid hierarchy, many rules, centralized decision authority, fixed duties, formalized communication system and taller organization structure. Mechanistic organization structure may cause failure of TQM implementation. Possible reason for the lack of moderation (power distance/uncertainty avoidance) in Pakistan is due to mechanistic structure of health organization.

The finding suggests that health organizations (public hospitals) switch mechanistic organizational structure or bureaucratic organizational structure (rigid hierarchy, many rules, centralized decision authority, fixed duties, formalized communication system and taller structure) with organic organization structure (cross hierarchical teams, few rules, decentralized decision making, adaptable duties, informal communication and flatter structure). Organic organizational structure persuades low power distance and low uncertainty avoidance that lead organization towards TQM implementation in less time with fewer cost.

5.3 Theoretical contribution

The findings of this study lend credibility to the resource-based view (RBV) by providing additional empirical evidence. The RBV postulates that performance of the firm is influenced by the firm's bundle of intangible and tangible resources (Wernerfelt 1984, Barney 1991). In the light of RBV theory, infrastructure TQM is regarded in this study as organizational resources which could improve organizational performance. Moreover, this study provided an important examination about the role played by core TQM in increasing the organizational performance. The mediating effect of core TQM as a mechanism that can explain the relationships more between infrastructure TQM, and organizational performance was examined. The results revealed that core TQM plays an important role in creating and enhancing organizational performance. In addition, the significance of core TQM contributes to the RBV theory by adding it as an important resource to achieve the organizational competitive advantages. Thus, this study

contributes to the RBV by providing empirical evidence to support the assertion of the theory.

Second, large body of previous TQM researchers confirmed the soundness of European Foundation for Quality Management (EFQM) model to study health organization performance (Perides 2007, Mirfakhredini, Farid et al. 2009, Taghizadeh and Noorossana 2011, Moreno-Rodrı, Cabrerizo et al. 2013, Persaud 2013, Taghizadeh Herat and Noorossana 2013, Ebrahlmlpour, vafaee et al. 2014, Coucke 2015, van Schoten, de Blok et al. 2016). In spite of the critical importance of EFQM model in the healthcare sector, past researchers predominantly ignore the application of EFQM model in Pakistani healthcare sector (Irfan and Ijaz 2011, Irfan, Ijaz et al. 2012, Javed and Ilyas 2018, Javed, Liu et al. 2018). This study strengthens EFQM model which posits that the TQM enablers leads organization towards better performance. In addition, this study is significant since it will add new information to the existing literature, and develop an extended body of knowledge related to EFQM. It also expects to formulate a new version of the EFQM, as a comprehensive model to investigate the performance of health organizations.

Third, this study symbolizes a first-time attempt to introduce and tested a new set of infrastructure TQM (leadership, human resource management, financial management and IT infrastructure) and core TQM (customer focus and satisfaction, continuous improvement and process management) practices in the context of service organizations. In order to achieve excellent results, consideration of TQM practices from two dimensions infrastructure TQM and core TQM is indispensable (Calvo-Mora, Ruiz-

Moreno et al. 2014). Viewed TQM from the perspective of infrastructure TQM and core TQM help practitioners to understand TQM system in order to enhance organization performance (Patyal and Koilakuntla 2017).

Fourth, the current study showed the significance of core TQM for the organizational performance. Due to the inconsistent results about this relationship, this study contributed to the management literature by reexamining the effect of core TQM on organizational performance. However, there are bulk research works in the literature that tested the effect of core TQM on organizational performance; still there is no agreement among the researchers (i.e. Psomas, Vouzas et al. 2014, Naeem 2018). As a result of the inconclusiveness in results, many practitioners and academics question of the suitability of core TQM strategy for organizational performance. The findings of this study, however, confirmed the positive significant impact of core TQM on the organizational performance.

Fifth, important contribution of this study is the context. It is debated by (Al-Dhaafri, Al-Swidi et al. 2016) and (Shafiq, Lasrado et al. 2017) that most TQM literatures were conducted in the developed countries e.g. USA, Mexico, Canada, Japan, UK, Spain, Norway, Portugal, Italy, Germany, Australia, New Zealand, Taiwan and Singapore. Hence, suggested the need for studies in different part of the world including Asia. Therefore, this study is conducted in Pakistan, thereby adding to the existing body of knowledge and bridge the gap that exists between Asia and other part of the world. Moreover, the majority of previous studies concentrated on the manufacturing and

services sectors. However, this study as a contrary to that extended the existing literature concerning infrastructure TQM, core TQM, national culture, and organizational performance in the public sector, taking the public hospitals in Pakistan as a case. Most of studies in public sector in general and health care sector in particular were conceptual, observational, and descriptive in nature (i.e. Punjani, Shams et al. 2014, Nizar and Chagani 2016, Qidwai 2016, Ahmad Hassan, Khalid Mahmood et al. 2017). Therefore, this study on the public hospitals in Pakistan has been an attempt to add existing empirical existing literature.

Sixth, this study used Balanced Scorecard approach to measure hospital performance. The Balanced Scorecard health care expanded organization measures beyond financial analysis. The use of balanced scorecard approach facilitates practitioners to translate organization vision, mission and objective by knowing the weaknesses of the organization (Wati and Triwiyono 2018). This study extends the current literature on Balanced Scorecard approach, particularly in health care settings, which has not clearly been investigated in previous studies (i.e. Irfan, Ijaz et al. 2012, Ali and Alolayyan 2013, Sweis, Ahmad et al. 2016, Ahmed, Abd Manaf et al. 2017, Xiong, He et al. 2017).

Finally, in addition to the hypotheses testing and the model testing, this study conducted a rigorous analysis on the validation instrument. Majority of the previous studies depended on the traditional instrument validation such as factor analysis and Cronbach alpha coefficient. These kinds of instruments are not sufficient in the current complex needed analysis. More specifically, the present study used Partial Least Squares Structural

Equation Modeling (PLS-SEM) approach to validate the measurement model and testing the hypothesized relationships. Thus, this study can be considered as one the very few thesis and studies that employed the approach of PLS-SEM to analyze the measurement model goodness of fit and testing the proposed hypotheses.

5.4 Practical Implications

The current study's results have significant contribution for managers, practitioners and policy makers. There are many insights advantages of TQM practices that can enrich the organizational performance to achieve the organizational objectives. Moreover, the study's findings also provided insight advantageous on how TQM practices (core and infrastructural TQM) and national culture can enhance the organizational performance. Core TQM practices and Infrastructural TQM practices can be considered as organizational change initiatives, establishment of supportive environment. The findings of the study can help the top management of the hospitals for institutionalizing TQM practices by taking advantages of these findings; the management of the public hospitals can implement effective plans or strategies to increase the organizational performance. Following are some practical contributions.

Firstly, the findings suggest that the infrastructural TQM practices (human resource management, leadership, information technology infrastructure and financial management) have significant effect on the organizational performance. The role of top management in hospital system is very crucial so that the leadership practices can help the top management to manage the relationship between the internal or external

customers as well as with their relationship with the organization. These practices can build tendency among the management to work on company's vision and mission. The findings of the study can help the top management to perform certain roles, provision of resources, increase the quality work, setting future organizational goals, settings goals timings and achieving it and build competitive environment to enhance organizational performance. The findings regarding the implementation of TQM practices can also help the physicians, surgeons, and pharmacist and health professionals to be in a lead role as well as to encourage their subordinates so that they will also equally contribute in the successfulness of organizational performance. In addition to leadership role, employees of the organization are the valuable assets and human resource management practices strictly focus on the employees of the organization. The findings of the study can help the top management to enhance the employee's participation, employee's empowerment, training and development, rewards or recognitions systems that leads towards the fulfillment of the organizational performance.

To avoid the financial risks and effective use of available resources the study's findings will help the management to manage the financial matters efficiently. In addition, financial controls, accountability measures and prudent allocation of financial resources can also be managed efficiently with these findings. In a similar vein, IT infrastructure contributes to the performance of health organization. To utilize and improve the Information technology in the health system optimized overall performance of the health organization. In health settings, challenges like rising cost of health, complexities in

diseases and diagnostics, established international standards and rapidly technology growth can be handle with the findings of the study.

Secondly, the results of the current study advocate that the core TQM practices (process management, customer focus & satisfaction and continuous improvement) have incremental effect on the organizational performance. Implementation of TQM practices and its continuous improvement both are important drivers and have huge contribution in the business excellence. The findings of the study will help the top management to increase productivity, to enhance performance as it is an ongoing process for the proliferation of organization. The findings also suggest that with the continuous improvement in the public hospitals, the patient complexities and changing patterns of diseases will be replaced with advanced practices and equipment to satisfy the patients. For the top management of the organization the results of the contemporary study propose that the utilization of resources in a systematic approach can help to improve the quality and performance of the organizations. In the healthcare sector, the TQM process management practices can improve the tangible and intangible services delivered by the hospitals and make these services error free. The current findings also help them for designing of services, benchmarking the best practices and processes, increased patient safety, efficient waste disposal system, healthy & hygienic environment for patients. Outcome of the patients' expectations and perceptions will be beneficial for the organizational performance. The outcomes of the study will also help the management to get the most satisfied patients. Implementation of verdicts of the study will help the top management of the public hospitals to get success in marketplace, attain competitive

advantage, gain financial benefits and fulfilled current needs of the patients and future wishes. These findings put the top management in consideration for quick timely response to patients, involvement of patients in the designing and development phase, ability for sound diagnostics, provide the best consultation and offer the best specialized treatment and care. In many countries around the globe, the healthcare sector is considered as industry, these healthcare institutions are offering the specialized healthcare services. By the employment of existing findings, the organization will have satisfied patients and patients' involvement in various procedures designs will enhance the organizational performance. This will attract the international patients those will increase the health tourism and contribute not only towards the GDP of Pakistan but also create a competitive environment in hospital industry especially in public hospitals as compared to private hospitals.

Thirdly, in the line of the relationship of TQM practices on organizational performance and the inconsistent results in the prior studies, organizational regulation and policy interceded in the current study to describe the practices in a better way and these can enhance the organizational performance. Additionally, the results of the study can also help the other service industries to follow the same rules and regulations while implementing the TQM practices in the organizations. The study can also provide insights to the manufacturing, public, private, public-private and service organizations in Pakistan and other Asian region. This study is a guideline for the local as well as the international organizations those striving for excellence. This extensive literature and results can increase the organizational performance in various sectors to attain the

competitive advantages and increase the organizational performance. In addition, the private hospitals can also have a great value for the results of findings of this study. Moreover, the management of the hospitals also implements other initiatives, strategies and practices for the successfulness of the organizational goals.

Finally, the findings of the study help the Ministry of national health services (NHS), regulations & coordination Islamabad Pakistan to determine and better understand the findings of empirically tested variables studied in the public hospital's performance in Pakistan. The findings provided with first hand information regarding the variables of organizational performance to support government policies. Therefore, the TQM practices will help the hospital management to enhance their performance and a frame of future references of academia, students, research oriented activities and other stakeholders.

5.5 Implications for the National Economic Growth

Pakistan is a country of 199 million populations and majority of population lives below the poverty line. Since independence, Pakistan has started the healthcare journey with limited focus on national health policy and its impact on the growth of national economy. With the rapid population growth, the country is facing multiple challenges in the healthcare services delivery to the masses. The government of Pakistan should plan properly and implement effective healthcare systems by using following strategies.

The national health policy can be implemented when the Government should efficiently utilize and distribute the available resources among the urban and rural populations. The access to quality healthcare service should be increase to the underprivileged areas of the country. Capitalization of professional human resources (registered doctors and lady nurses) must be mandatory. Pre-service and in-service training and development of the staff especially the lady health workers, dispensers and health technicians should be taken into consideration. Government can take proactive actions to reduce the corruption and increase accountability within the health organizations. Government spending on health budget should be increased to facilitate the masses.

Tech-based healthcare systems adopted by various governments have changed the ways to serve the general public. The use of technology especially information technology can provide the health related information easily. IT can help to follow up the common people with reminders via text messages for providing cost effective healthcare. Involvement of stakeholders in planning and decision making processes can also improve healthcare activities. Concerned authorities can monitor and evaluate system properly. Government should provide safe environment to doctors and other medical staffs and keep motive them by giving extra incentives. The model of medical and health insurance should be adopted for the general public. The promotion of public private partnership, social insurance system, research and development by government can also have a huge impact. Research publications by the scholars and other research related activities will attract the international agencies to work with the public sector for the health promotion.

5.6 Limitations and future recommendations

This study has some form of data weaknesses due to limited time constrains and limited resources and leave avenues worthy of pursuit in future researches. First, the current study adopted quantitative survey method to collection data from the respondents. The respondents were requested to answer the questions according to their perceptions regarding the questions asked in the self-administrative questionnaire. The answer given by the respondent may be influenced by the biased perception of the situation (Macinati 2008). Hence, the study recommends that the future research methods should be qualitative or mixed mode. Furthermore, qualitative research design will help to complement each other with the current research and also considered as comparative studies.

Second, the data was collected at one shot through cross sectional approach in this study and also give opportunity for the future research. Cross sectional study has inability to prove the cause and effect relationship and less understanding of the cause and effect relationship (Sekaran 2003, Uma and Roger 2003). Longitudinal research method has tendency to explain the complex relationship among the variables over a long period of time. In the existing study, TQM practices and its types (core and infrastructural TQM practices), mediating of core TQM as well as the moderating role of national culture towards the organizational performance of public hospitals have given opportunity for future researchers to use longitudinal research method. Longitudinal study will help to develop more understanding among the variables development and to detect the required changes for the relationship between these variables.

Third, the self-administrative questionnaire survey was targeted at upper level management i.e. head of the departments of the public hospitals of Pakistan. The diverse perspective of middle level or low level management will give another insight on TQM applications with more hostile outcomes. The ordinary worker's perceptions which are differing from other management will also be considered as well. Therefore, the future studies should cover different levels of workforce to involve the employees other than medical staff for the evaluation of these constructs. The patients' perceptions in performance rating could be evaluated in the future research.

Fourth limitation is the lack of relevant studies in the prior literature with the best of knowledge of the current researcher. The lack of the related studies limits the researchers to tackle the same factors. In other words, the lack of related studies cannot give chance to researchers for the comparison towards the findings or results. In Pakistani context, as per the little knowledge of the researcher there was no research previously examined the current relationships of the variables of this study. So, the researchers had no edge to compare and contrast and had started the study without the advantage of other findings.

Fifth, the TQM practices in the current study were based on two types' core TQM practices (process management, customer focus and satisfaction and continuous improvement) and infrastructural TQM practices (leadership, human resource management, information technology infrastructure and financial management). These total quality practices are limited in the existing study and various other factors like supplier relationship, quality information can also influence the organizational

performance in the context of hospitals. Furthermore, the moderating role of organizational culture and other organizational characteristics (size of firm, ownership of firm and time quality management) can also be investigated in the future studies.

Finally, the study restraints the sample that was taken from the public hospitals of Pakistan and cannot be generalized to the other service organizations. In Pakistan, the populations of the private hospitals are also in larger number. Therefore, the researchers will conduct future studies in the private hospitals of Pakistan and more future studies will be conducted on the comparison of public hospitals and the private hospitals.

5.7 Conclusion

In sum of this study, the enhancement of the organizational performance is still one of the main issues for the organizations in general and public organizations in particular. In the developing countries like Pakistan, to boost the overall organizational performance the managers and decision makers always have been attention towards it. It is acknowledged that the role of TQM on OP (organizational performance) is the foremost effective strategy for the enrichment of the organizational performance.

The first objective is to determine the relationship between infrastructural TQM and the core TQM practices. Hence the result of smart PLS 2.0 indicated that this relationship is supported and showed a good predictor of TQM practices leads towards the organizational performance. The second objective is to examine the relationship of core TQM and the organizational performance. So, this relationship is also supported.

Consequently, all the issues related to TQM practices (core TQM and infrastructural TQM) have given emphasis by the public hospital leaders and decision makers. The third objective aims whether core TQM mediate infrastructural TQM and organizational performance. Based on the findings of the study, core TQM was a mediator to infrastructure TQM and organizational performance. Therefore, the support of core TQM towards infrastructural TQM can enhance the organizational performance as per the findings of the current study. The fourth objective of the study is to investigate the moderating role of national culture (power distance and uncertainty avoidance) between the core TQM and the organizational performance. The findings of the study revealed that national culture (power distance and uncertainty avoidance) were not moderated among the relationship of core TQM and the organizational performance. In Pakistan, mechanistic organizational structure or bureaucratic organizational structure in the public hospitals are the two main reasons of no moderating effect.

In this study, the conceptual framework consists of following variables i.e. infrastructural TQM (leadership, human resource management, financial management and IT infrastructure), core TQM (process management, customer focus and satisfaction and continuous improvement), national culture (power distance and uncertainty avoidance) and organizational performance by using BSC approach. In the wake of the findings of the study, all the research questions and research objectives were answered. The conceptual framework was in line with the underpinning theory of RBV and EFQM model.

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Questionnaire

Dear

It is my pleasure to inform you that I am conducting a pilot and field study for the purpose of making a scientific research in order to be awarded the PhD degree in Public Management from the University of Utara in Malaysia. The title of the study is "Mediating role of Core TQM in the relationship between Infrastructure TQM and Organizational Performance Public Hospital in Pakistan: Moderating role of National culture". Will you kindly answer the questions on the attached questionnaire as your cooperation in this respect will be of great effect in concluding valuable results from this study. The researcher wants to give every assurance that all information given in this questionnaire will remain, and dealt with confidentially, and will be used solely for the purpose of scientific research.

Thanking your co-operation,

Researcher

Muhammad Qasim Maqbool

Section One

Demographic Varaible

This part contains statements concerning general information about the participants Please read the following statements and checks the category that best describes your situation.

1. **Type Of Hospital:**

   General ( ) Spectialist ( )

2. **Gender:**

   Male ( ) Female ( )

3. **Age:**

   Below 30 ( ) 31-40 ( ) 41-50 ( ) 51-60 ( )

4. **Qualifaction:**

   Bachelor ( ) Master ( ) PhD ( ) Diploma or Other ( )

5. **Designation:**

   Principal ( ) Medical Superintendent (MS) ( ) Head of department ( )

   Director quality ( ) Quality assurance manager ( )

6. Working Experience:

1-5 year ( ) 6-10 years ( )

11-15 years ( ) More than 15 year ( )

7. TQM Programs:

Only one program ( ) More than one program ( )

8. Time of TQM programs adoption

Less than 1 ( ) 1-3 year ( ) More than three year ( )

Section Two

Instructions

Please indicate your level of strongly disagree or strongly agree with the following statements: Key:

1 = Strongly disagree; 2 = Disagree; 3 = Disagree somewhat; 4 = Neutral; 5 = Agree somewhat agree; 6 = Agree; 7 = Strongly agree

No	Leadership							
1	Our hospital's top management supports a long-term quality improvement process and provides the necessary and continuous resources for quality improvement.	1	2	3	4	5	6	7
2	Our hospital's top management participates in quality improvement activities.	1	2	3	4	5	6	7
3	Quality is considered as a strategic priority by top management.	1	2	3	4	5	6	7
4	Our hospital's top management makes strategic quality planning based on customers' requirements.	1	2	3	4	5	6	7
	Human Resource Management							
1	In our hospital teams and committees are formed to improve health service quality.	1	2	3	4	5	6	7
2	In our hospital quality training courses are held periodically.	1	2	3	4	5	6	7
3	In our hospital recommendations and suggestions provided by employees are utilized to improve health service quality.	1	2	3	4	5	6	7
4	In our hospital employees are rewarded for their contributions to quality practices.	1	2	3	4	5	6	7

	Financial Management							
1	Our hospital increase fees from time to time	1	2	3	4	5	6	7
2	Some operations in our hospital are run on debt	1	2	3	4	5	6	7
3	Sometimes, there is misdirection and misallocation of funds	1	2	3	4	5	6	7
4	Development projects are adequately financed	1	2	3	4	5	6	7
	Information technology infrastructure							
1	Hospital management are able to enforce standards that ensure compatibility of new IT platforms with existing ones	1	2	3	4	5	6	7
2	Hospital management follows processes through which legacy IT systems do not limit the development of new IT systems.	1	2	3	4	5	6	7
3	Hospital management is able to integrate different and distributed IT systems by keeping the data architecture flexible.	1	2	3	4	5	6	7
4	Hospital management is able to make evolutionary changes to IT platforms.	1	2	3	4	5	6	7
5	By linking different and distributed IT platforms, hospital IT infrastructure has helped us to integrate internal and inter hospital processes.	1	2	3	4	5	6	7
6	Hospital management are effective in supporting new strategic initiatives by keeping IT systems scalable	1	2	3	4	5	6	7
	Continuous improvement							
1	In our hospital, there is always an emphasis on the continuous improvement in all the activities at various levels.	1	2	3	4	5	6	7
2	In our hospital, continuous improvement is emphasized in the training programs provided to	1	2	3	4	5	6	7

	employees.							
3	In our hospital policies, improving the quality is more important than the quantity and short term goals	1	2	3	4	5	6	7
4	In our hospital, all departments and stations believe that by implementing continuous improvement strategies, they can survive and serve better in the highly competitive environment	1	2	3	4	5	6	7
	Process Management							
1	Processes in our hospital are designed/improved based on customers' requirements.	1	2	3	4	5	6	7
2	Use of preventive controls to ensure quality services in our hospital.	1	2	3	4	5	6	7
3	Our hospital makes extensive use of statistical techniques to reduce variation in processes.	1	2	3	4	5	6	7
4	Our hospital has good plans for an emergency to ensure operations not to be interrupted.	1	2	3	4	5	6	7
5	Our hospital conducts preventive equipment maintenance	1	2	3	4	5	6	7
6	Clear work or process instructions are given to employees.	1	2	3	4	5	6	7
7	Our hospital wards are well organized and clean.	1	2	3	4	5	6	7
	Customer Focus and Satisfaction							
1	Our hospital is in close contact with patients and other customers.	1	2	3	4	5	6	7
2	Our customers give us feedback on quality and delivery performance.	1	2	3	4	5	6	7
3	Our hospital regularly carries out external customers' satisfaction survey	1	2	3	4	5	6	7
4	We use customer requirements and expectations	1	2	3	4	5	6	7

	as the basis for quality.							
5	Our employees know who our customers are.	1	2	3	4	5	6	7
	Customer perspective							
1	The hospital conducts an annual survey to determine the patient's satisfaction with the hospital performance.	1	2	3	4	5	6	7
2	Patients get courtesy and respect from the medical staff and administrative.	1	2	3	4	5	6	7
3	The hospital offers services for patients in shortest possible time.	1	2	3	4	5	6	7
4	The hospital is keen to provide high quality services	1	2	3	4	5	6	7
5	Patients have a good image of the management reputation	1	2	3	4	5	6	7
	Internal process perspective							
1	The hospital offers a number of new services (i.e. endoscopy, MRI, CT Scan or Angiography).	1	2	3	4	5	6	7
2	The hospital provides an acceptable ratio of medical staff to patients.	1	2	3	4	5	6	7
3	The hospital offers all the facilities (i.e. medical equipment and medicine) in proportion to the number of patients.	1	2	3	4	5	6	7
4	The hospital provides to meet scientific requirements of the all activities.							
	Learning and growth							
1	Hospital top management encourages the Medical staff to receive awards such as patents, excellence awards	1	2	3	4	5	6	7

2	Hospital top management dealing seriously with the Medical staff suggestions	1	2	3	4	5	6	7
3	Hospital top management is keen to adaption to new technology and new ideas	1	2	3	4	5	6	7
4	Hospital top management contributes to the involvement of all the staff to develop competencies.	1	2	3	4	5	6	7
5	Hospital top management encourages Medical staff to increase research productivity.	1	2	3	4	5	6	7
6	Medical excellence is top management objective (through an increasing publish articles in journals, scientific conferences, and scientific awards)	1	2	3	4	5	6	7
	Financial perspective							
1	Hospital top management gets an increase in the funding rate from time to time.	1	2	3	4	5	6	7
2	Investment in human resources is a priority of hospital top management.	1	2	3	4	5	6	7
3	Hospital top management encourages medical staff to get annual grants.	1	2	3	4	5	6	7
4	Hospital top management encourages to more efficient and effective use of financial resources.	1	2	3	4	5	6	7
	Power distance							
1	In our hospital, subordinates are afraid to express disagreement with their superior.	1	2	3	4	5	6	7
2	In our hospital supervisor usually makes decisions on his/her own and then expects the decisions to be carried out loyally and without raising difficulties	1	2	3	4	5	6	7
3	In our hospital supervisor usually makes decisions on his/her own but before going ahead explains	1	2	3	4	5	6	7

	the reasons for the decisions and answers any questions.							
4	I prefer to work for any type of supervisor expect for one who asks me for advice and then announces his/her decision and expects me to loyally implement the decision whether or not it was in accordance with the advice I gave.	1	2	3	4	5	6	7
	Uncertainty avoidance							
1	In our hospital, it is very important to follow organizational rules even if I think it is in the organization's best interests if I break the rules.	1	2	3	4	5	6	7
2	It is important for me to work in a well-designed job situation where the responsibilities and requirements are clear.	1	2	3	4	5	6	7
3	It is very important for me to have long term security of employment.	1	2	3	4	5	6	7
4	It is very important for me to have little tension and stress on the job.	1	2	3	4	5	6	7